A Division of Systems, Inc.

DLM
DOCK LEVELER
MANUFACTURING

CentraAir®

PATENT PENDING

Dock Leveler

Owner's / User's Manual

DLM® • Division of Systems, Inc. • W194 N11481 McCormick Drive • Germantown, WI 53022
800.643.5424 • fax: 262.255.5917 • www.docksystemsinc.com • techservices@docksystemsinc.com

Printed in U.S.A.
Copyright © 2015

Manual No. 4111-0043
Jan 2015
Oct 2015

Table of Contents

Page

Safety
Recognize Safety Information 1
General Operational Safety Precautions 1
Operational Safety Precautions 2
Maintenance Safety Precautions 4
Safety Decal's 5
Owner's User's Responsibilities 6

Introduction
General Information, ... 7
Dock Leveler Stock Specifications 7
Component Identification 8
Theory 8

Installation
Prepare Pit 9
Prepare Dock Leveler 10
Install Dock Leveler 12
Install Control Panel and Wiring 16
Placard Installation 17
Air Line Installation 18
Put New Leveler Into Service 22

Operation
Operating Instructions 24
- Ramp Loading/Unloading Instructions 25
- End Loading/Unloading Instructions 26

Maintenance
Service Dock Leveler Safely 27
Periodic Maintenance 28

Adjustments
Adjust Lip Latch and Lip Actuator Springs 30
Adjust Lip Stop 32
Snubber Spring Assembly 33

Troubleshooting
Troubleshooting 34

Parts
Electrical 36
Control Box 37
Air Control Valves 38
Below Dock Control 41
Bellows and Regulator 43
Frame and Platform 44
Lip Activation 46
Weather Seal 47
Placard 48

Miscellaneous
Customer Information 49
Warranty ..... Back Cover

Recognize Safety Information

Safety - Alert Symbol

The Safety-Alert Symbol identifies import safety messages on equipment, safety signs, in manuals, or elsewhere. When you see this symbol, be alert to the possibility of personal injury of death. Follow the instructions in the safety message.

DANGER

The use of the word DANGER signifies the presence of an extreme hazard or unsafe practice which will most likely result in severe injury or death.

WARNING

The use of the word WARNING signifies the presence of a serious hazard or unsafe practice which may result in serious injury or death.

CAUTION

The use of the word CAUTION signifies possible hazard or unsafe practice which could result in personal injury.

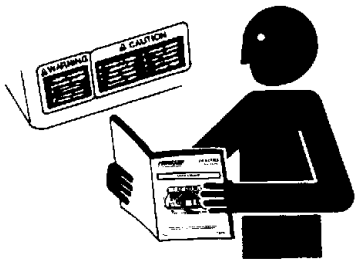
NOTICE

The use of the word NOTICE is to draw attention to a procedure that needs to be followed to prevent machine damage.

SAFETY INSTRUCTIONS

Indicates a type of safety sign, or separate panel on a safety sign, where safety-related instructions or procedures as described.

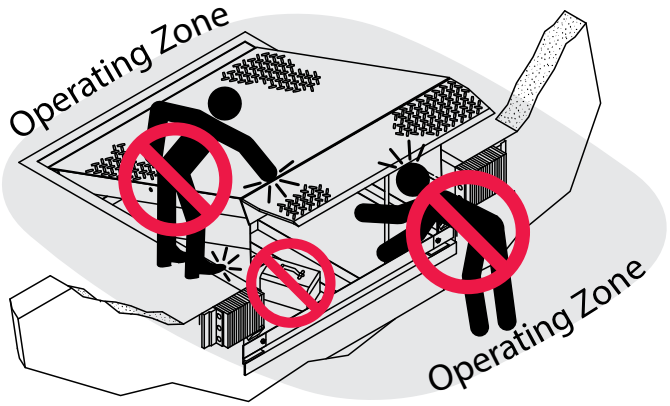
General Operational Safety Precautions



Read and understand the Owner's/User's manual and become thoroughly familiar with the equipment and its controls before operating the dock leveler.

Never operate a dock leveler while a safety device or guard is removed or disconnected.

Never remove DANGER, WARNING, or CAUTION signs or Decal's on the equipment unless replacing them.



Do not start the equipment until all unauthorized personnel in the area have been warned and have moved outside the operating zone.

Remove any tools or foreign objects from the operating zone before starting.

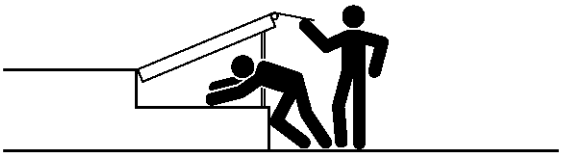
Keep the operating zone free of obstacles that could cause a person to trip or fall.

Operational Safety Precautions

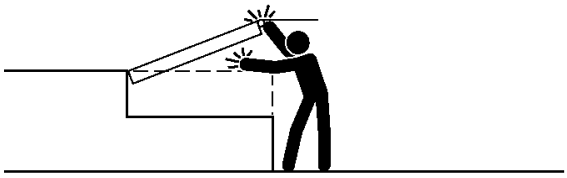
Learn the safe way to operate this equipment. Read and understand the manufacturer's instructions. If you have any questions, ask your supervisor.

DANGER

Stay clear of dock leveling device when transport vehicle is entering or leaving area.

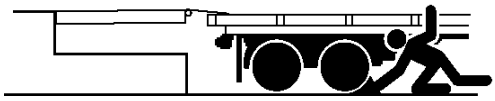


Do not move or use the dock leveling device if anyone is under or in front of it.

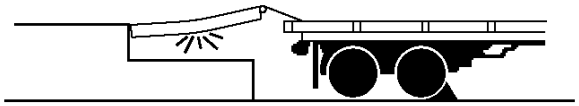


Keep hands and feet clear of pinch points. Avoid putting any part of your body near moving parts.

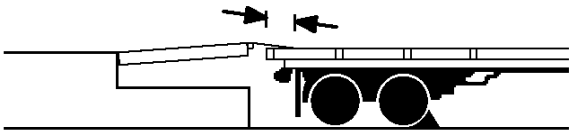
WARNING



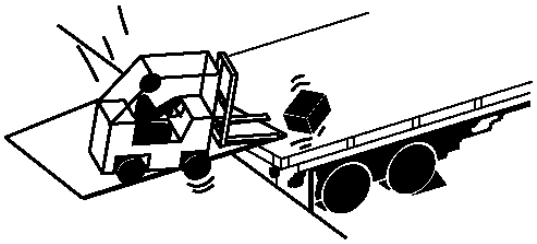
Chock/restrain all transport vehicles, Never remove the wheel chocks until loading or unloading is finished and transport driver has been given permission to drive away.



Do not use a broken or damage dock leveling device. Make sure proper service and maintenance procedures have been performed before using.

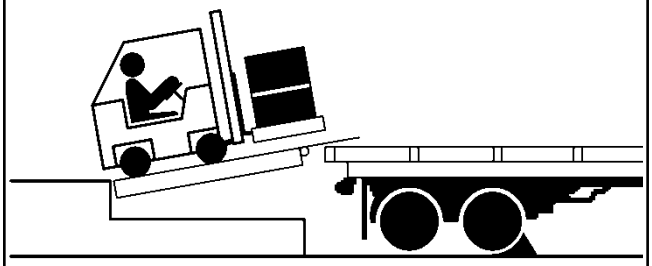


Make sure lip overlaps onto transport vehicle bed at least 4 in. (102 mm).

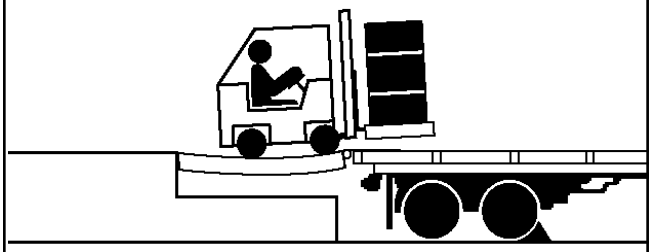


Keep a safe distance from both side edges.

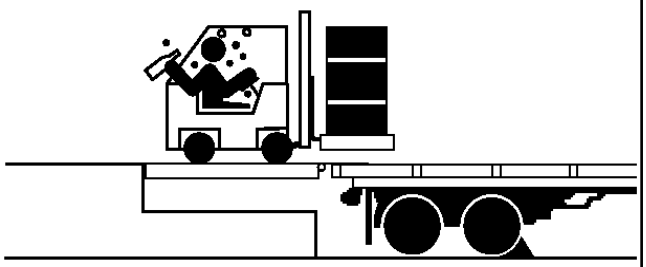
⚠WARNING



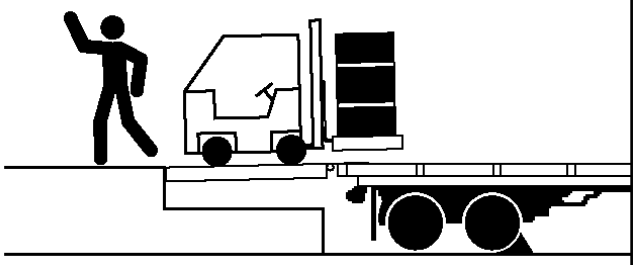
Do not use dock leveling device if transport vehicle is too high or too low.



Do not overload the dock leveling device.



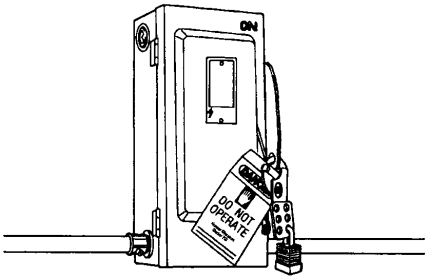
Do not operate any equipment while under the influence of alcohol or drugs.



Do not leave equipment or material unattended on dock leveling device.

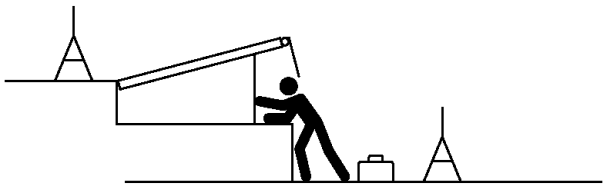
Maintenance Safety Precautions

⚠DANGER



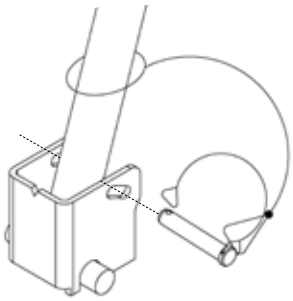
Hydraulic and electrical power must be OFF when servicing the equipment. For maximum protection, use an OSHA approved locking device to lock out all power sources. Only the person servicing the equipment should have the key to unlock the device.

⚠CAUTION



Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the unit before maintenance is complete.

⚠WARNING



A maintenance prop permanently attached and hinged to the unit with means for lock out/tag out requirements (per OSHA 1910.147) is included with each pit style dock leveler. In addition, it is recommended and good safety practice to use an additional means to support the dock platform and lip anytime when physically working in front of or under the dock leveler. This additional means may include, but not limited to a boom truck, fork truck, stabilizing bar or equivalent.

⚠WARNING

ALWAYS disconnect electrical power source and ground wire before welding on dock leveler.

DO NOT ground welding equipment to any hydraulic or electrical components of the dock leveler. Always ground to the dock leveler frame.

Failure to follow these instructions may result in damage to dock leveler and/or serious personal injury or death.

⚠WARNING

DO NOT grind or weld if hydraulic fluid or other flammable liquid is present on the surface to be ground or welded

DO NOT grind or weld if uncontained hydraulic fluid or other flammable liquid is present. Stray sparks can ignite spills or leaks near the work area. Always clean up the oil leaks and spills before proceeding with grinding or welding.

Always keep a fire extinguisher of the proper type nearby when grinding or welding.

Failure to follow these instructions may result in serious personal injury or death.

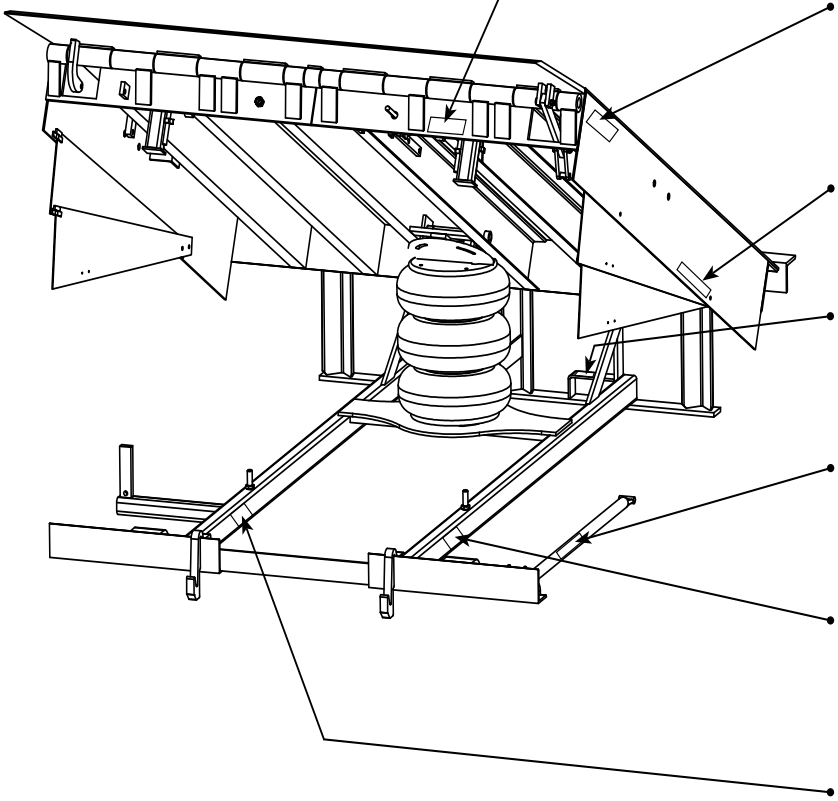
⚠WARNING

ALWAYS stand clear of dock leveler lip when working in front of the dock leveler. Failure to do this may result in serious personal injury or death.

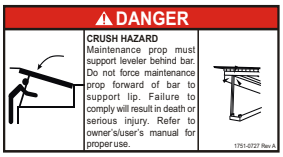
⚠ DANGER
Arc Flash and
Shock Hazard
PPE (Personal Protection
Equipment) Required
De-energize equipment before working on or inside. Do not open cover without appropriate PPE. Refer to NFPA 70E for PPE requirements. This panel may contain more than one power source.
Hazardous Voltage
Will Cause Sever
Injury or Death

Safety Decal's

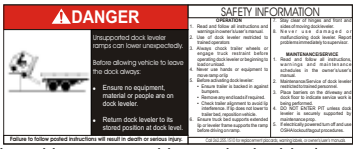
Every 90 days (quarterly) inspect all safety labels and tags to ensure they are on the dock leveler and are easily legible. If any are missing or require replacement, please call 1-800-643-5424 for replacements.



1751-0727


DANGER
CRUSH HAZARD
Maintenance prop must support leveler behind bar. Do not force maintenance prop forward of bar to support lip. Failure to comply will result in death or serious injury. Refer to owner's/user's manual for proper use.
1751-0727 Rev A

1751-0730 (x2)


DANGER
Unsupported dock leveler ramps can lower unexpectedly.
Before allowing vehicle to leave the dock always:
Ensure no equipment, material or people are on dock leveler.
Return dock leveler to its stored position at dock level.
Failure to follow posted instructions will result in death or serious injury.
SAFETY INFORMATION

(decal placed in same position on both sides)

1751-0329 (x2)

(decal placed in same position on both sides)

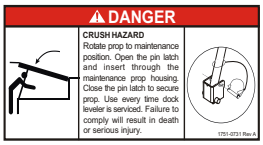
1751-0330 (x2)

(decal placed in same position on both sides)

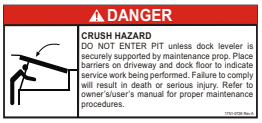
1751-0729

DANGER
CRUSH HAZARD
Do not work under dock leveler unless this maintenance prop has been secured in the upright position. Failure to comply will result in death or serious injury. See owner's/user's manual for proper procedures.
1751-0729 Rev A

1751-0731


DANGER
CRUSH HAZARD
Rotate prop to maintenance position. Open the pin latch and insert through the maintenance prop housing. Close the pin latch to secure prop. Use every time dock leveler is serviced. Failure to comply will result in death or serious injury.
1751-0731 Rev A

1751-0726


DANGER
CRUSH HAZARD
DO NOT ENTER PIT unless dock leveler is securely supported by maintenance prop. Place barriers on driveway and dock floor to indicate service work being performed. Failure to comply will result in death or serious injury. Refer to owner's/user's manual for proper maintenance procedures.

OWNER'S/USER'S RESPONSIBILITIES

1. The owner/ user should recognize the inherent dangers of the interface between the loading dock and the transportation vehicle. The owner/ user should, therefore, train and instruct all operators in the safe operation and use of the loading dock equipment in accordance with manufacturer's recommendations and industry standards. Effective operator training should also focus on the owner's/user's company policies and operating conditions. Maintaining, updating and re training all operators on safe working habits and operation of the equipment, regardless of previous experience, should be done on a regular basis and should include an understanding and familiarity with all functions of the equipment. Owner's/user's shall actively maintain, update and retrain all operators on safe working habits and operations of the equipment.

2. The manufacturer shall provide to the initial purchaser all necessary information regarding Safety Information, Operation, Installation and Safety Precautions, Recommended Initial and Periodic Inspections Procedures, Planned Maintenance Schedule, Product Specifications, Troubleshooting Guide, Parts Break Down, Warranty Information, and Manufacturers Contact Information, as well as tables to identify the grade(slope) for all variations of length or configuration of the dock leveling device and information identifying the maximum uncontrolled drop encountered when sudden removal of support while in the working range of the equipment.

3. It is recommended that when the transportation vehicle is positioned correctly in the dock opening and in contact with both bumpers, there shall be a minimum of 4.00 inches (100mm) overlap of the leveling device and the transportation vehicle at all times during the loading and unloading process.

4. The Owner/User must review all name plates, placards, decals, instructions and posted warnings and place the same in view of the operator or maintenance personnel for whom such warnings are intended for. Contact manufacturer for any replacements.

5. Manufacturer's recommended periodic maintenance and inspection procedures in effect at the date of shipment shall be followed at all times. Written documentation of maintenance, replacement parts or damage should be retained. In the event of damage notification to the manufacturer is required.

6. Loading dock equipment that has been structurally damaged or has experienced a sudden loss of main support while under load (such as what might occur when a transport vehicle pulls out from under the leveling device) shall be removed from service, inspected by a manufacturer's authorized representative, and repaired or replaced as needed before being placed back in service.

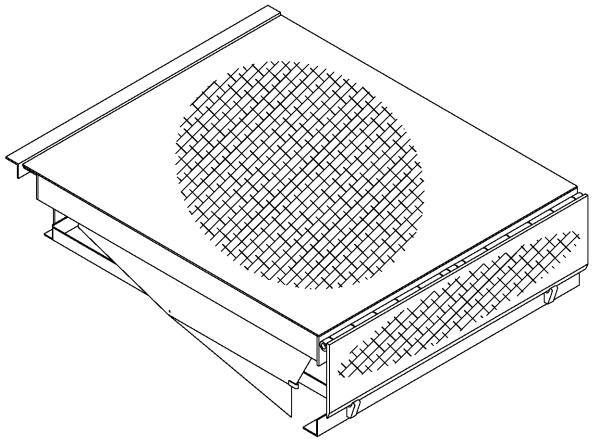
7. Any modifications or alterations of loading dock equipment shall only be done with prior written approval from the manufacturer and the same shall be at least as safe as the original equipment was prior to the modification and shall also satisfy all safety requirements of the manufacturer for the particular application of the leveling device.

8. When industrial moving devices are being used in the loading or unloading of product from the transportation vehicle, this vehicle shall have the brakes and wheel chocks applied appropriately or all other positive restraining device shall be fully utilized. It is recommended that transport vehicles with air-ride suspension systems shall have its air exhausted prior to performing loading and unloading operation to minimize transport vehicle bed drop.

9. Loading dock safety equipment should never be used outside of its intended use, vertical working range, or capacity. Please consult the manufacturer if you have any questions as to the use, vertical working range or capacity of the equipment. Only properly trained and authorized personnel should operate the equipment.

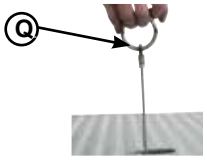
10. When selecting loading dock safety equipment, it is NOTICE to consider not only present requirements but also future plans and any possible adverse conditions, environmental factors or usage.

General Information



Congratulations on your choice of a DLM® dock leveler. This manual covers the CentraAir® dock leveler.

Designed by DLM to be a marvel of simplicity and efficiency, your dock leveler, when properly installed, will provide many years of trouble-free performance with an absolute minimum of maintenance. Its revolutionary air bellows system efficiently controls and operates every function. To obtain maximum performance and longest possible use, a simple program of preventive maintenance is recommended.



The CentraAir® dock has three control options. Lanyard cable, electrical control or pneumatic control, which allows operation of the dock leveler functions. Each CentraAir® leveler unit and control panel have been factory assembled and tested to ensure satisfactory operation.

To illustrate which connections are to be made in the field at installation, electrical drawings and pneumatic hose drawings are included with each order or by contacting Technical Services.

Once again, thank you and congratulations on your purchase of a DLM CentraAir® dock leveler.

Dock Leveler Stock Specifications

CentraAir®Series dock levelers are available in the following sizes, weight capacities, and options:

Width:
- 6 ft (1828.8 mm)
- 6-1/2 ft (1981.2 mm)
- 7 ft (2133.6 mm)

Length
- 6 ft (1828.8 mm)
- 8 ft (2438 mm)
- 10 ft (3048 mm)

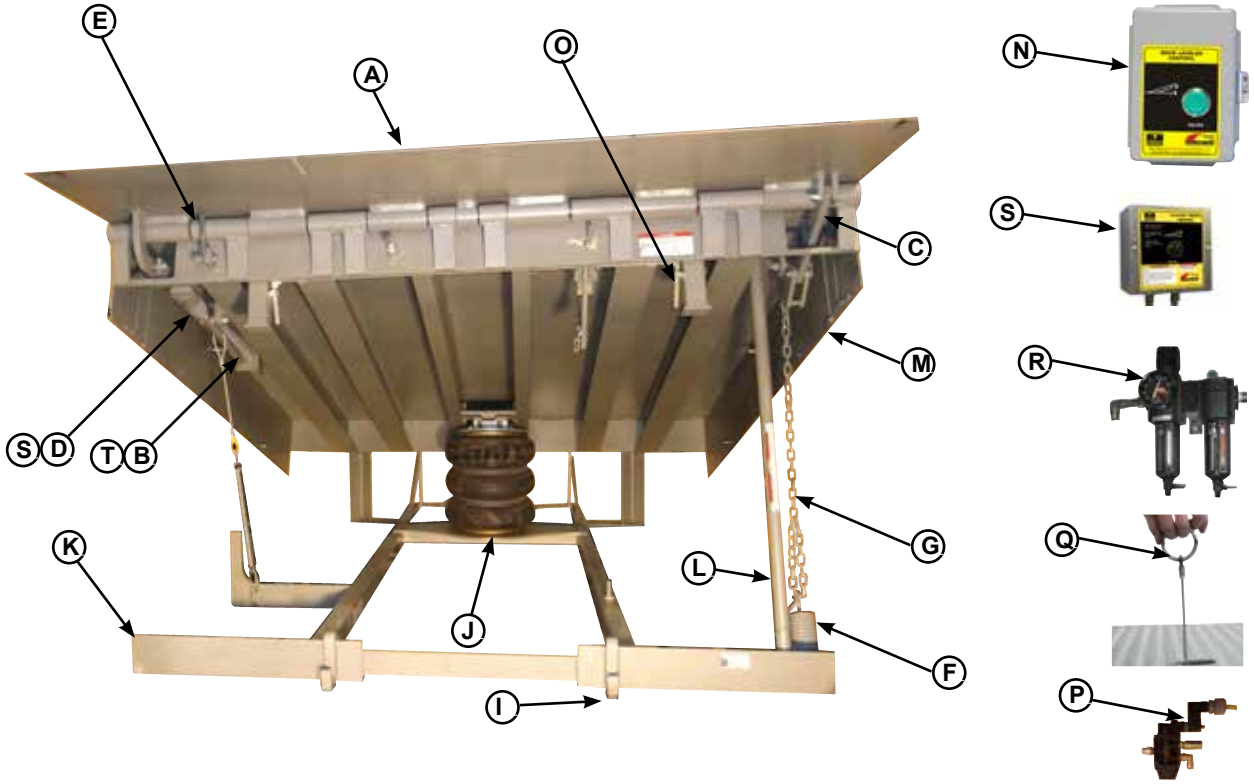
Capacity (CIR*)
- 25,000 lb (11 340 kg)
- 30,000 lb (13 608 kg)
- 35,000 lb (15 876 kg)
- 40,000 lb (18 144 kg)
- 45,000 lb (20 412 kg)
- 50,000 lb (22 680 kg)

* CIR (Comparative Industry Rating)

All docks are available in 115V Controls, pneumatic push button or lanyard.

INTRODUCTION

Component Identification



A — Lip
B — Lip Assist Rod
C —Lip Linkage Assembly
D — Lip Latch Assembly
E — Lip Maintenance Prop Pivot
F — Lip Actuator Chain Spring
G — Lip Actuator Chain
H — Lip Actuator Chain Adjustment Link (not shown)
I — Lip Keepers (2 used)
J — Air Bellows
K — Main Frame
L — Maintenance Prop
M —Toe Guard (2 used)
N —Raise Button (Electric)
O —Safety Legs
P —Air Control Valve
Q —Lanyard
R —Filter/Regulator - Lubricator
S —Raise Button (Air)
T —Lip Assist Spring

THEORY

The CA dock leveler uses Compressed Air with a lanyard or (single push button) operation for ease of use.

The dock leveler can be operated three different ways. 1.) Depress RAISE button (N) on the control panel. This activates an electric solenoid (P). The solenoid allows compressed air into the air bellows causing the platform to rise. When RAISE button is released the platform to lower.

2.) Depress RAISE button (S) on the control panel. Allows allows compressed air into the air bellows causing the platform to rise. Releasing the RAISE button allows the platform to lower.

3.)Pull up and hold the Lanyard (Q) chain in the rear of the unit until platform and lip are fully extended. Releasing the chain allows the platform to lower.

The regulator (R) supplies 95 PSI to the bellows. (J)

When the platform rises to with in 2-3 in. (51-76. mm) of its full raised height, the lip spring (F) and lip actuator chain (G), causes the lip linkage assembly to push the lip out and up.

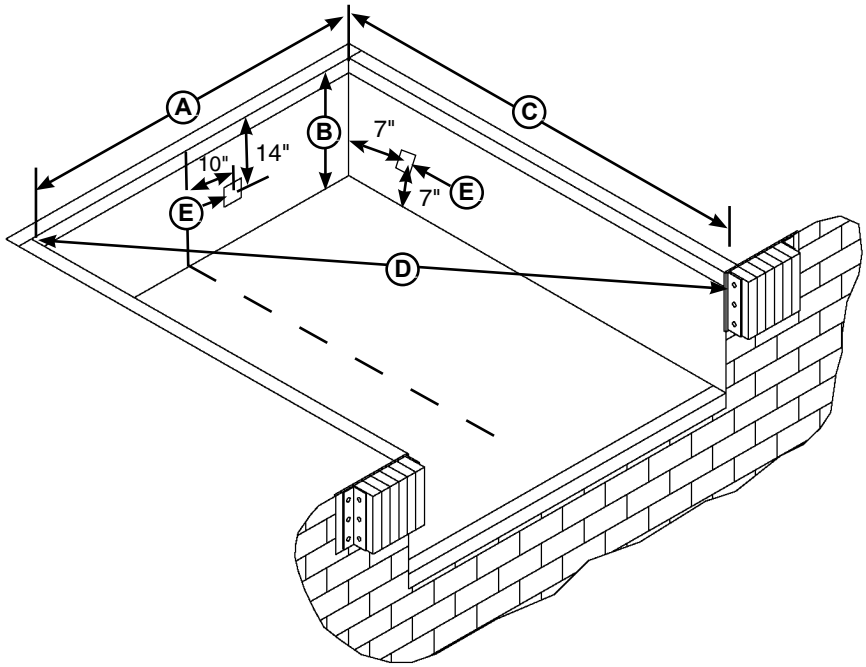
The lip assist spring (S) also assist pushing the lip out. When the lip is fully extended, the lip latch cable engages the lip latch assembly, locking the lip in the extended position. The dock leveler has reached its full height when the lip is fully extended.

To lower the platform, release the lanyard (Q) or RAISE button (N or S).

The platform will lower until the extended lip rests on the transport vehicle. If the lip did not fully extend or there is no transport vehicle at the dock the platform will lower until one of the following conditions occur:

- Lip is resting in lip keepers (cross-traffic position).
- Leveler went to the below-dock position, lip folds automatically, leveler rests on the safety legs (below dock position).
- Leveler went to the below dock position with operator holding the safety leg retract cable (not shown), safety legs are retracted, lip folds automatically causing dock to rest in the full below dock position.

Prepare Pit



A—Distance (Pit Width) (Front and Rear) **B— Distance (Dock Floor-to-Pit Floor) (All Four Corners)** **C— Distance (Pit Length) (Both Sides of Pit)** **D— Distance (Pit Corner-to-Corner) (Top, Bottom, and Both Sides)**

⚠WARNING

Post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before installation has been completed.

Failure to follow the installation instructions can result in damage to dock leveler, the facilities, and/or serious personal injury or death.

⚠CAUTION

Only trained installation professionals with the proper equipment should install this product.

NOTICE

DO NOT remove the shipping bands around the dock leveler lip until instructed to do so.

Before lowering the dock leveler into the pit, the following must be performed:

1. Remove all debris from the pit and sweep the pit clean.

2. Check the entire dock leveler pit for proper construction according to approved/certified pit drawings. Make sure pit is square by making the following measurements:

   - Measure pit width distance (A) at both front and rear of pit.
   - Measure dock floor-to-pit floor distance (B) at all four corners.
   - Measure pit length distance (C) at both sides.
   - Measure corner-to-corner (crisscross) distance (D) at both sides. Take measurements at dock floor level and at pit floor level.

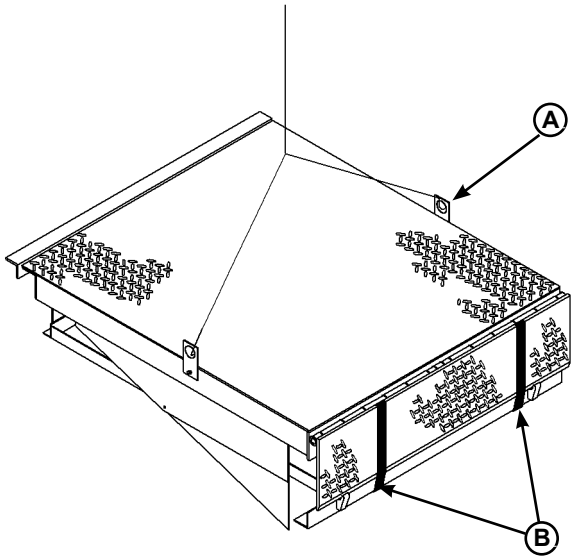
   I*f any measurement is off by more than 1/8 in. (3.18 mm), contact Technical Services before proceeding.*

When Required:

3. Make sure the field junction box for the dock leveler (E) is at the correct location per pit diagrams.

4. Make sure the conduit for the air lines(E) are at the correct location per the pit diagram

Prepare Dock Leveler



A— Lifting Bracket (2 used) **B — Shipping Bands**

DLM® dock levelers are designed with installation in mind. Each unit is shipped with lifting brackets (A) fastened to the platform side joists.

⚠WARNING

The dock leveler is heavy. Use a lifting device and chains with the appropriate lifting capacity and reach.

Always use the lifting brackets provided with the unit whenever lowering or lifting a dock leveler into or out of a pit.

Failure to follow these instructions may result in damage to dock leveler and/or serious personal injury or death.

CFM	Leveler #s	Recommended Compressor Size
7.3	3-6	1.5 HP 20 GAL @ 90 PSI
17.5	6 & up	5 HP 60 GAL @100 PSI

NOTICE

DO NOT remove the shipping bands (B) around the platform lip and leveler frame at this time. The shipping bands are needed to hold the leveler together during the installation process.

1. Remove any control panel and bumpers that may be banded to the frame of the dock leveler. DO NOT remove the shipping bands (B) around the platform lip and leveler frame at this time.

NOTICE

DO NOT over tighten the lifting bracket hardware. Over tightening can damage the weather seal, if equipped.

NOTE: Overall width of platform and lifting brackets (A) must be kept to a minimum to prevent interference between the lifting brackets and the pit walls as the dock leveler is lowered into the pit.

2. Make sure the mounting hardware of lifting brackets (A) is snug. The brackets should pivot relatively freely on the mounting cap screw. DO NOT over tighten.

3. Attach lifting chains to lifting brackets (A) and to a lifting device (i.e., hoist or fork truck) having the appropriate lifting capacity and reach.

4. Remove wood blocks that maybe attached to the leveler frame before putting the dock leveler into the pit.

5. Raise the leveler to allow the leveler sit on the maintenance prop.

Remove 3 plastic ties, 2 Rear, 1 Front before lowering into pit

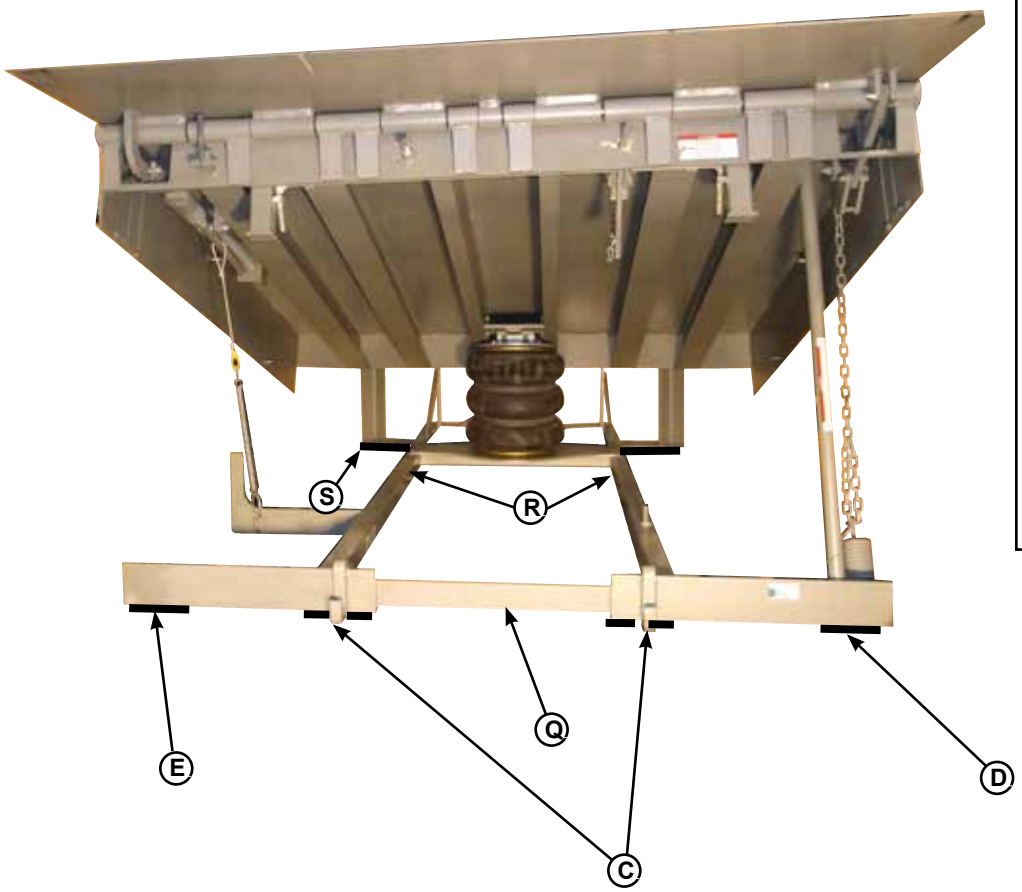
NOTICE

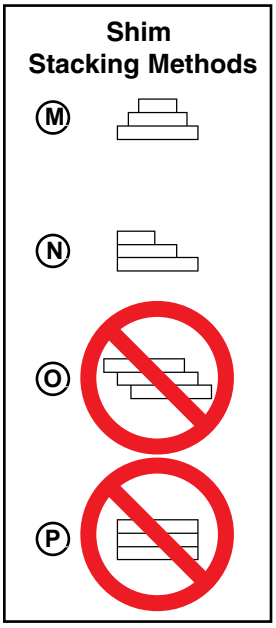
Compressor pump MUST be filled with appropriate oil prior to initial start up. Refer to manufactures manual for proper maintenance procedure.

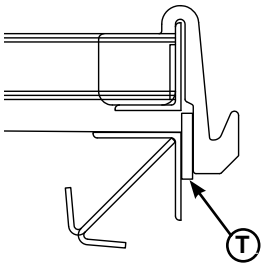
1751-1037

This page intentionally left blank

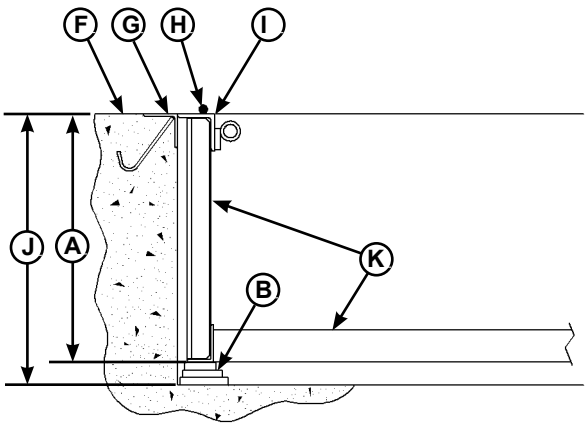
Install Dock Leveler







A— Distance (Leveler Frame Height)
B— Shim Locations (Under Rear Vertical Supports)
C— Shim Location (Under Lip Keepers)
D— Shim Locations (Under Maintenance Prop)
E— Shim Locations (Under Lip Spring)
F— Dock Floor
G— Rear Pit Curb Angle
H— String
I— Rear Hinge Frame Angle
J— Distance (Dock Floor-to-Pit Floor)
K— Dock Leveler Frame
M — Pyramid (Preferred)
N— Stepped (Acceptable)
O— Offset (Not Acceptable)
P — Straight (Not Acceptable)
Q— Removable Frame Section
R— Shim Location (Bellows Mounting Plate, Both sides)
S— Shim Locations
T — Shim between lip keeper curb angle when required.



NOTE: DLM® dock levelers are designed with a nominal 1/2 in. (12.7 mm) shimming distance to allow for pit inconsistencies.

1. Determine height of shim stack (B) for each shim location (S) by performing the following:

   a. Measure leveler frame height distance (A).

   b. Measure dock floor-to-pit floor distance (J) at each shim location (B). Write down the dimensions obtained at each location.

   c. Subtract distance (A) from distance (J) to obtain the shim height. Repeat for each shim location.

NOTICE

The minimum size of the shim that contacts the leveler frame (i.e., the top shim of each shim stack) must be at least 4-1/2 x 4-1/2 in. (114.3 x 114.3 mm) to support the full width of the hoist cylinder / storage prop weldment.

Use the thickest shim stock possible for stability and weld penetration purposes. DO NOT use multiple layers of 1/8 in. (3.18 mm) or thinner shim stock.

2. Using the results obtained in step 1, create the individual shim stacks on the pit floor at locations (5). Build each shim stack (B) using the pyramid method (M) (preferred) or stepped method (N) with the top shim having a minimum size of 4-1/2 x 4-1/2 in. (114.3 x 114.3 mm) and each successive lower shim being larger so the shims can be welded together using a fillet weld. DO NOT use offset method (O) or straight method (P).

NOTE: To assist in obtaining an accurate measurement of distance (A), use a string (H) pulled tight across the pit opening, directly over the shim locations.

3. Verify that each shim stack is at the correct height by measuring distance (A) [top of shim stack (B) to dock floor].

4. For all CentraAir® models, put a 1/4 in. (6.6 mm) thick shim at locations (C,D and E).

NOTE: A 1/4 in. (6.6 mm) thick shim at locations (C,D and E) is used only as a starting point. The final shim stack height will be determined after dock leveler is lowered into the pit.

⚠WARNING

The dock leveler is heavy. Use chains and a lifting device with the appropriate lifting capacity and reach. Failure to do so may result in damage to dock leveler and/or serious personal injury or death.

5. Using an appropriate lifting device connected to the lifting brackets, lower dock leveler into the pit so rear hinge frame angle (I) is tight against rear pit curb angle (G) across full width of the leveler frame.

6. Allow rear of dock leveler to rest on the rear shims while keeping the front of the dock leveler level with the dock floor.

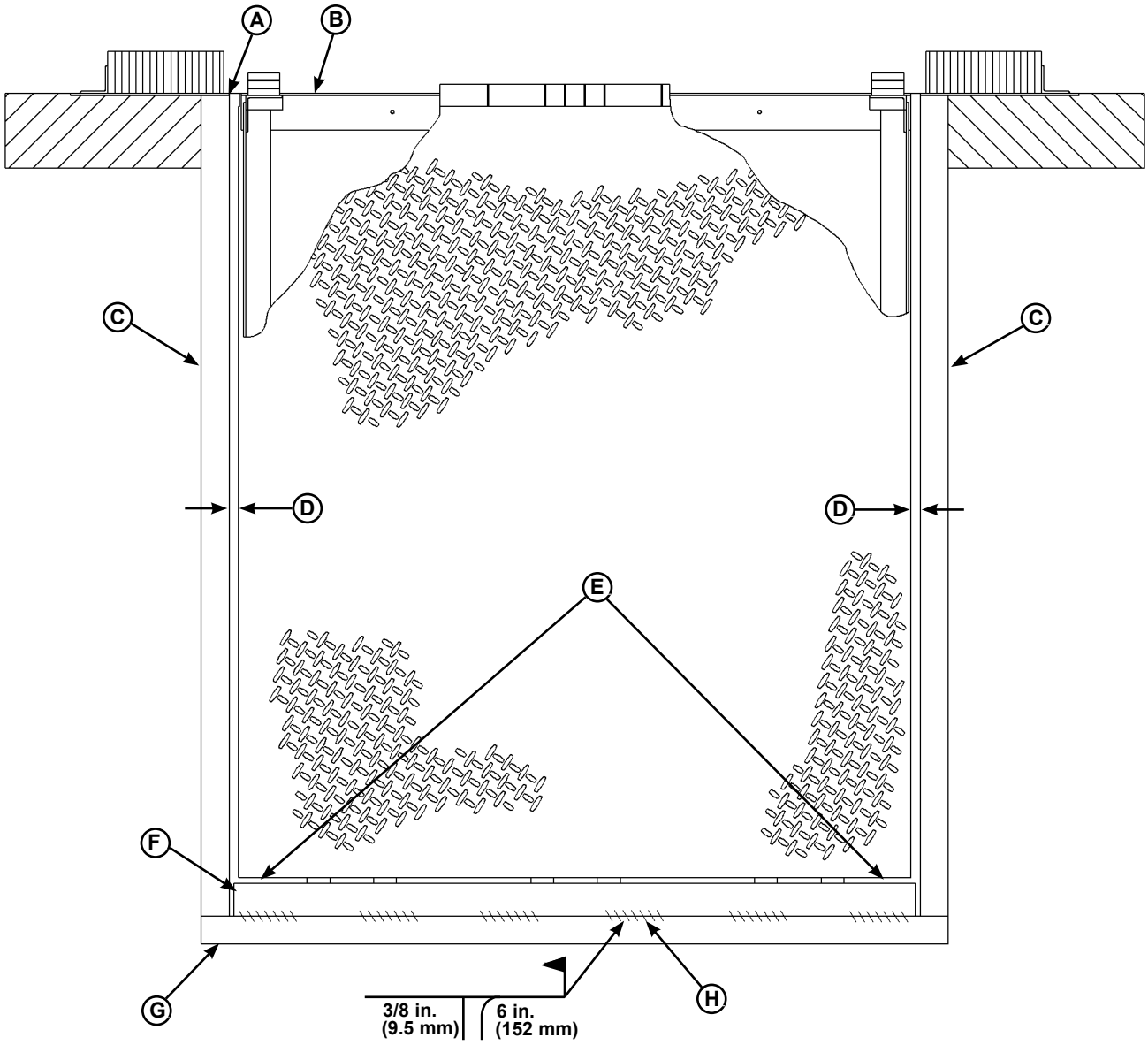
⚠WARNING

DO NOT grind or weld if hydraulic fluid or other flammable liquid is present on the surface to be ground or welded.

DO NOT grind or weld if uncontained hydraulic fluid or other flammable liquid is present. Stray sparks can ignite spills or leaks near the work area. Always clean up the oil leaks and spills before proceeding with grinding or welding.

Always keep a fire extinguisher of the proper type nearby when grinding or welding.

Failure to follow these instructions may result in serious personal injury or death.



A— Front of Dock Pit
B— Dock Leveler Frame
C— Side Pit Curb Angle
D— Gap [3/4 in. (19 mm) Minimum]
E— Pry Locations
F— Rear Hinge Frame Angle
G— Rear Pit Curb Angle
H— Flare Bevel Weld, Typical (To Fit Spacing)

8. With rear hinge frame angle (F) tight against rear pit curb angle (G), perform/check the following:

   - Pry between the platform and rear hinge frame angle at locations (E) to make sure rear edge of platform is parallel to the rear hinge frame angle (F).

   - Gap (D) must exist equally along both sides of leveler so weather seal (if equipped) will not bind during dock leveler operation.

9. If gap (D) cannot be obtained equally at both sides of leveler, grind or add material at the rear edge of rear hinge frame angle (F) as needed.

10. Allow the dock leveler to rest fully on the shim stacks. Check that a smooth and level transition exists between the dock floor and the dock leveler platform. Add or remove shims as necessary until a smooth transition is obtained.

11. If leveler cannot be squared and/or made level as instructed in steps 8 — 10, contact Technical Services.

12. With the leveler square in the pit and flush with the surrounding dock, remove the banding on the lip of the leveler.

13. Lift leveler with appropriate machinery.

14. Slowly raise the platform. Check for binding as platform is being raised.

15. If binding occurs, lower the platform. Reposition leveler and/or add or remove shims as necessary. Slowly raise platform again. If platform still binds, contact Technical Services for further instructions.

16. All CentraAir® models - Once leveler is flush, square and does not bind:

    a. Install shims under maintenance prop (D) where prop attaches to leveler frame. Make sure prop is solidly shimmed.

    b. Using appropriate machinery, raise the dock to the fully open position.

    c. Raise maintenance prop to the service (upright) position and lock prop in this position using an OSHA approved locking device.

17. Remove air bellows from the leveler by unbolting the bellows from the frame and the deck or wrap bellows with fire proof blanket to protect from weld sparks and splatter.

⚠CAUTION

Two people are required to engage the maintenance prop: one person to operate the lifting device, the other person to engage the maintenance prop.

⚠WARNING

DO NOT use the maintenance prop to support the raised platform until the maintenance prop has been properly shimmed and welded. The shims must be welded to each other, the leveler frame, and to the front pit curb steel. Failure to do this may result in serious personal injury or death.

NOTICE

DO NOT weld before disconnecting all electrical components.

DO NOT weld before removing air bag, air bag support pallet and hoses from leveler.

Protect or remove the blower motor before welding.

Failure to follow these instructions may result damage to these components from stray sparks and weld splatter.

⚠CAUTION

When drilling access hole in the control box, DO NOT penetrate too deep, components may be damaged.

DO NOT turn control upside down to drill any access holes. To prevent damaged to electrical components from debris cover components prior to drilling

Seal all conduit entrances to prevent moisture from entering the control box.

DO NOT use compressed air to clean control box. Recommended to vacuum debris from inside.

⚠WARNING

The electrical power must be OFF prior to electrical installation. For maximum protection, use an OSHA approved locking device to lock out all power sources. Only the person installing the equipment should have the key to unlock the power source.

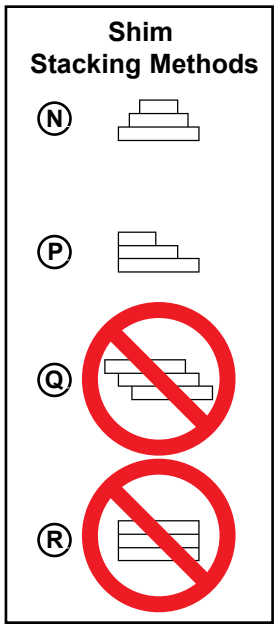
Failure to follow these instructions may result in serious personal injury or death.

NOTICE

DO NOT connect the dock leveler electrical wiring and ground connections until all welding has been completed.

DO NOT ground welding equipment to any hydraulic or electrical components of the dock leveler. Always ground welding equipment to the dock leveler frame, NEVER to the platform.

Failure to follow these instructions may damage the motor, wiring, and/or control panel.



* For left/right orientation of dock leveler, see inside back cover of this manual.

NOTICE

DO NOT weld continuously along the full length of the rear hinge frame angle. This can put unnecessary stress on the leveler components, causing the leveler to malfunction and shorten the life span of the affected components.

NOTE: The illustration on page 14 shows a typical weld pattern. The weld pattern will vary slightly depending on size of dock leveler.

18. With the rear hinge frame angle (F) tight against the rear pit curb angle and flush with the curb angle (G), weld the rear hinge frame angle (F) to the rear pit curb angle (G) using a 3/8 in. (9.5 mm) flare bevel skip weld — each weld being 6 in. (152 mm) long.

    Start at each end with a 6 in. (152 mm) long weld. Space all the other welds out evenly leaving approximately 6 in. (152 mm) space between each weld.

19. All model levelers: Install shims at locations (B, p.11) using the pyramid or stepped shimming method. Make sure the platform is level from side-to-side as well as from front-to-back and flush with dock floor.

20. Weld front of dock leveler frame (B) to shims located under the keepers, then weld the shims to the front pit curb steel.

21. Finish weld all shims using a fillet weld.

    - Weld all shims within each shim stack to each other, then weld the shim stack to the leveler frame.
    - Weld the front leveler frame shim stacks to the front pit curb steel.

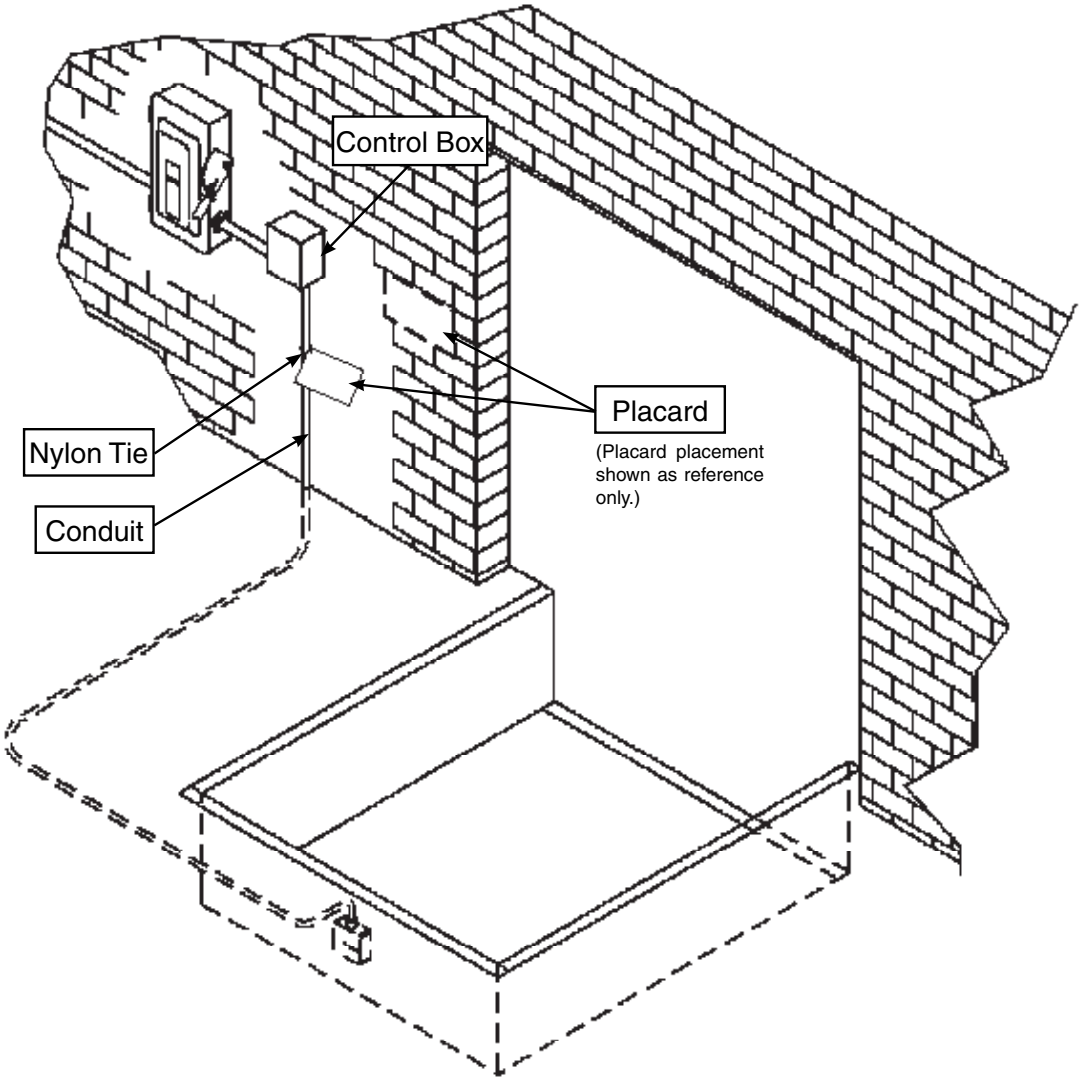
22. When all welding has been completed, paint all the welds and shims.

⚠WARNING

Make sure the platform is properly supported in the raised position before entering the pit to finish weld the shims. Failure to do this may result in serious personal injury or death.

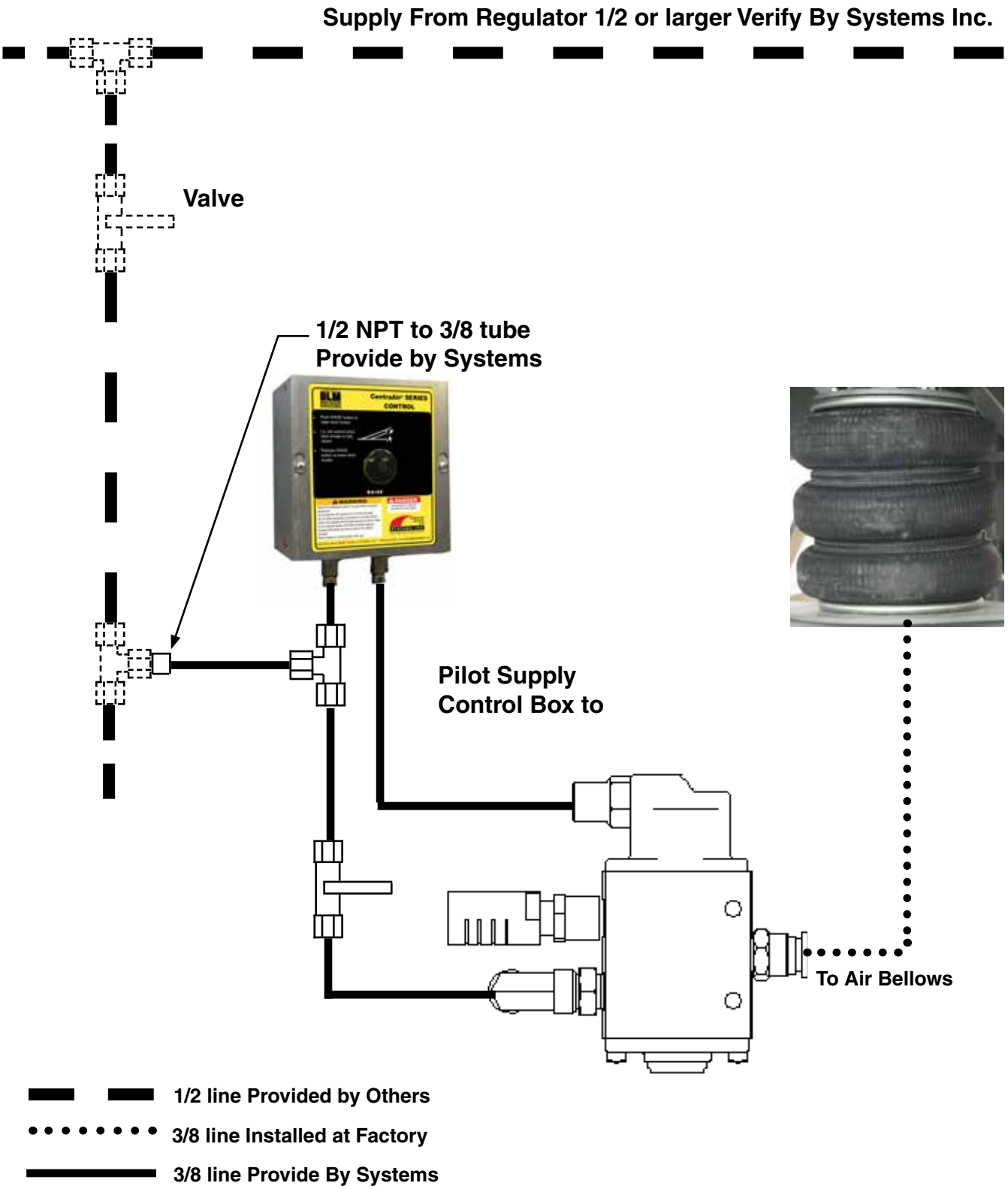
Placard Installation Instructions

- Owner is responsible for the installation and placement of product placards.
- Make sure placard is in plain view of dock leveler operations.
- Suggested placement of placard is near control box attached to electrical conduit by using nylon tie. If there is no control box present, mount placard on wall to the immediate left of leveler at eye level.



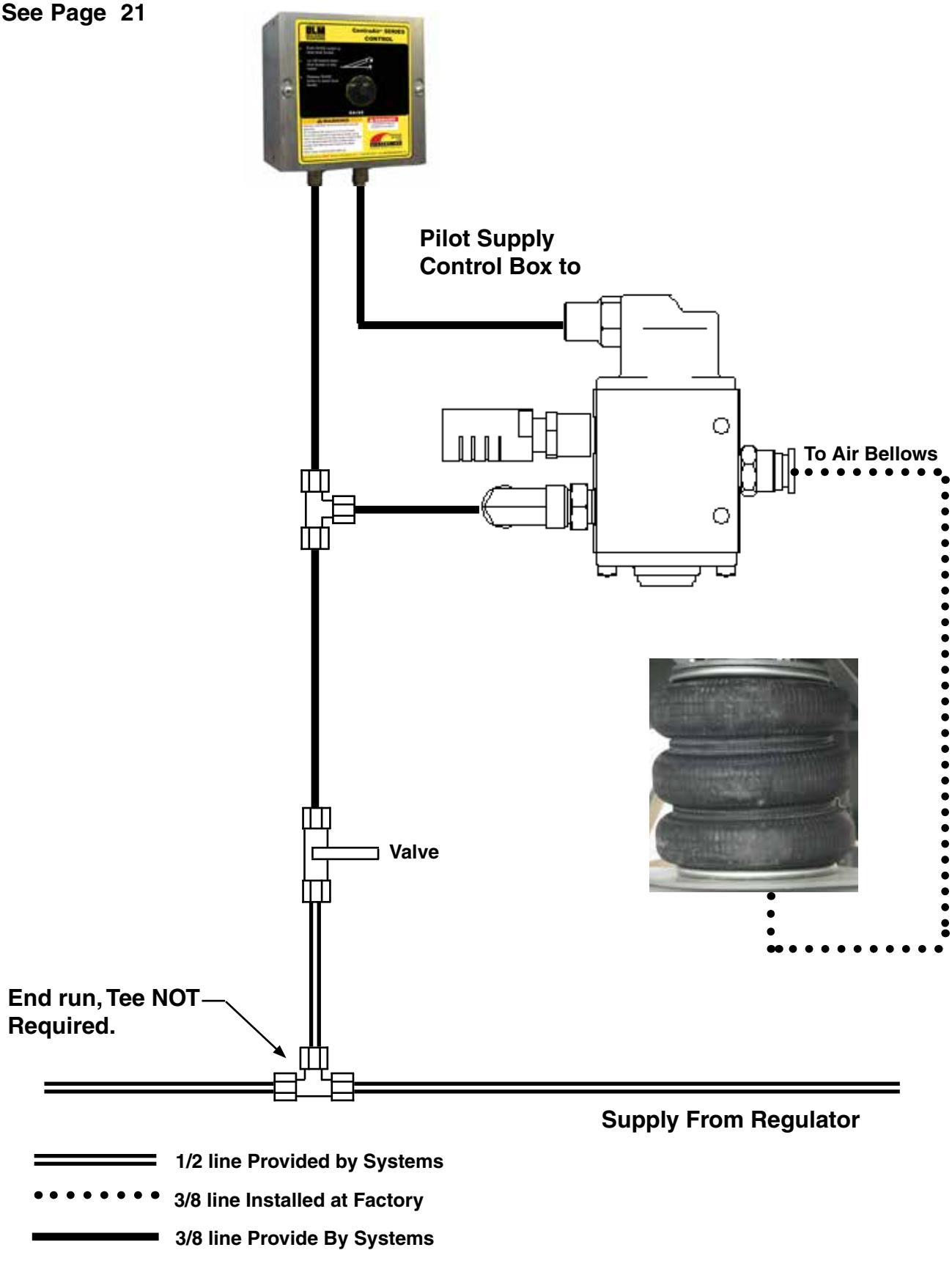
Overhead Air Supply Above Door Pneumatic Supply Kit #6106-0016

See Page 21


Supply From Regulator 1/2 or larger Verify By Systems Inc.
Valve
1/2 NPT to 3/8 tube
Provide by Systems
Pilot Supply
Control Box to
To Air Bellows
1/2 line Provided by Others
3/8 line Installed at Factory
3/8 line Provide By Systems

Underground Air Supply New Construction Kit# 6101-0018

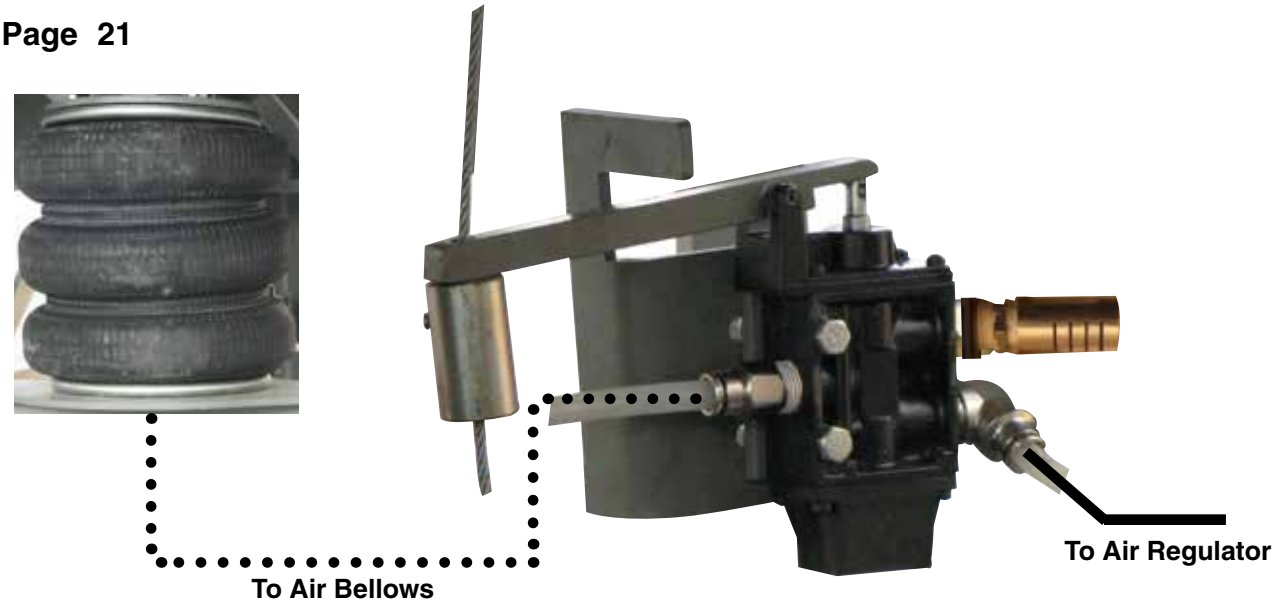
See Page 21



INSTALLATION

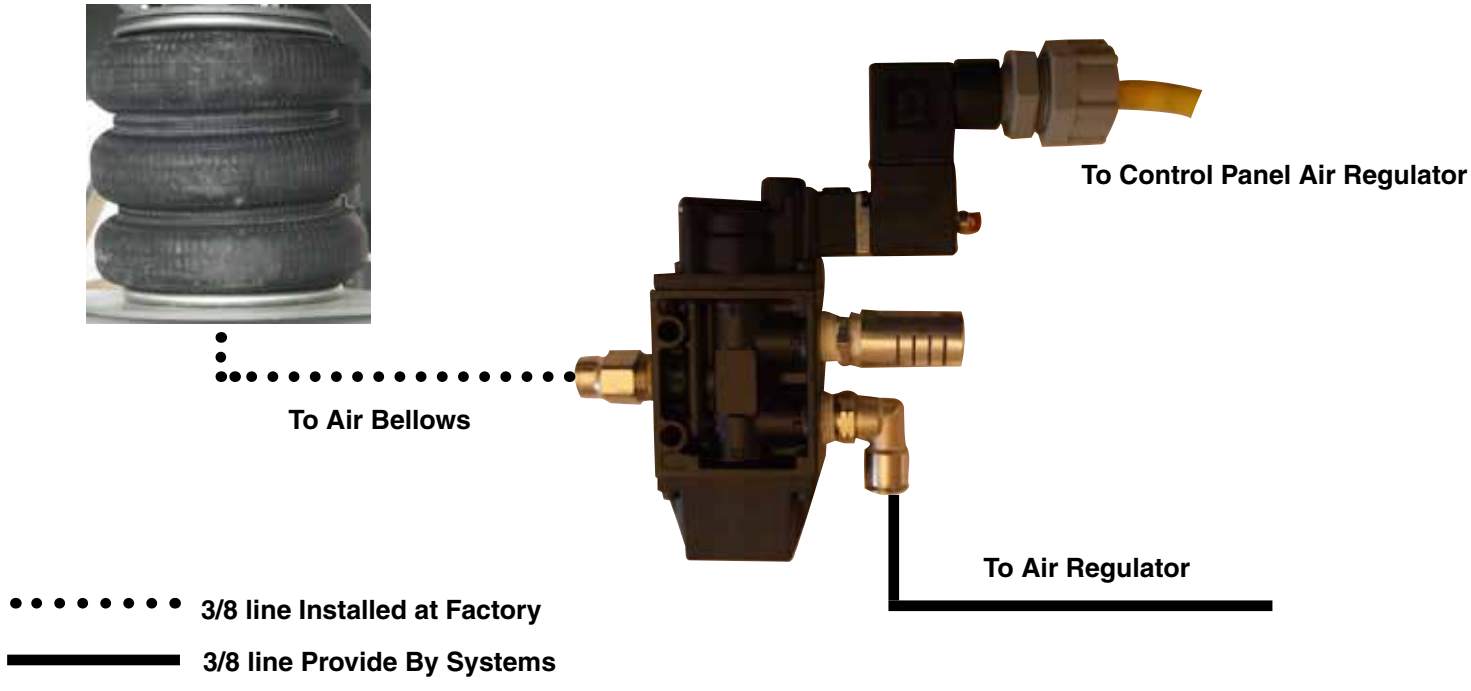
Lanyard Air Supply

See Page 21



Electric/ Pneumatic Controls

See Page 21



MISC PARTS REQUIRED FOR INSTALLATION OF CENTRA AIR DOCK LEVELERS

Overhead air supply New construction	Kit #
lever operated valve	6106-0013
electric pushbutton operation	6106-0013
pneumatic push button	6106-0015

Overhead air supply Retrofit	Kit #
lever operated valve	6106-0014
electric pushbutton	6106-0014
pneumatic push button	6106-0016

Underground air supply New construction	Kit #
lever operated valve	6106-0017
electric pushbutton	6106-0017
pneumatic push button	6106-0018

KIT NUMBER	3/8" nylon tubing R980-0001	1/2" polyethelyne tubing R984-0001	Fitting 1/2" NPT to 3/8" tubing 9301-0242	Fitting 3/8" union elbow 9301-0241	Fitting 3/8" union tee 9301-0244	Fitting 1/2" union tee 9301-0260	Shut off valve with 1/2" tube fittings 6106-0009	Shut off w/(1) 1/2" and (1) 3/8" ftg 6106-0012	Shut off valve with 3/8" tube ftgs 6106-0008	1/2" Tube Clamp rubber cushioned 2101-0260
6106-0013	30'		1						1	2
6106-0014	30'		1	5					1	6
6106-0015	60'		1		1				1	4
6106-0016	60'		1	10	1				1	12
6106-0017		TBD				1	1			
6106-0018	60'	TBD			1	1		1		4

The amount of 1/2" tubing varies by job. It is based on the door centerline and the distance to the compressor feed line fitting.

rev A revised 7/30/2014

Install Control Panel and Wiring or Pneumatic Lines

⚠WARNING

The electrical power must be OFF prior to electrical installation. For maximum protection, use an OSHA approved locking device to lock out all power sources. Only the person installing the equipment should have the key to unlock the power source.

Failure to follow these instructions may result in serious personal injury or death.

⚠WARNING

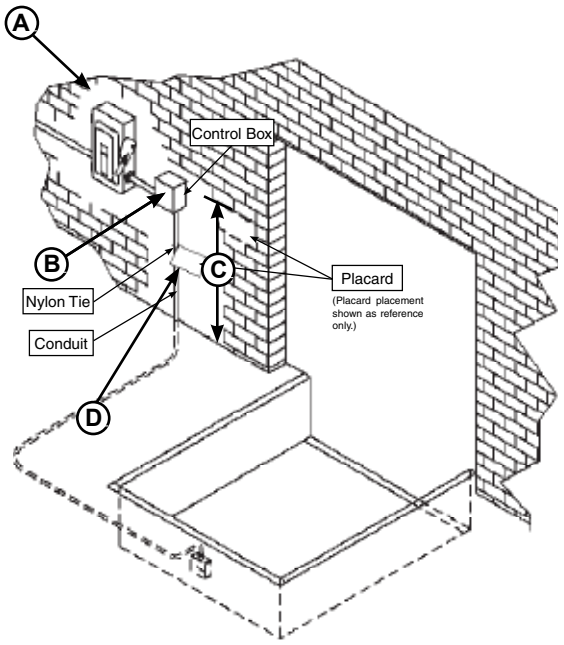
DO NOT make any final electrical connections until all welding has been completed. Failure to do this may result in serious personal injury or death.

⚠CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

1. Mount the push button control panel (B) so bottom of control panel-to-dock floor distance (C) is 48 in. (1219.2 mm).
2. Install pneumatic air lines to control panel.
3. Re-install the air bellows, and connect pneumatic air line.
4. After all pneumatic connections in the pit have been made, raise the leveler, disengage the maintenance prop and allow the platform to lower.
5. Install the Placard(s) (D), in close proximity to the control box and in plain sight.

DANGER
Arc Flash and Shock Hazard
PPE (Personal Protection Equipment) Required
De-energize equipment before working on or inside. Do not open cover without appropriate PPE. Refer to NFPA 70E for PPE requirements. This panel may contain more than one power source.
Hazardous Voltage Will Cause Sever Injury or Death



A— Disconnect Panel (Provided by others)
B— Control Panel C— Distance, 48 in. (14 630 mm)
D— Placard

Electric Controls

1. Mount the push button control panel (B) so bottom of control panel-to-dock floor distance (C) is 48 in. (1219.2 mm).
2. Install electrical disconnect panel (A) if not already installed.
3. Install and connect the control wiring.
4. Re-install the air bellows, and connect air line.
5. Connect the dock leveler power cable to coil. Refer to the electrical drawings supplied with the dock leveler.
6. After all electrical connections in the pit have been made, raise the leveler, disengage the maintenance prop and allow the platform to lower.
7. Install the Placard(s) (D), in close proximity to the control box and in plain sight.

Put New Dock Leveler Into Service

1. Disconnect the external lifting device and chains from the lifting brackets.

2. Check that the leveler is flush with the dock floor and that the platform lip contacts both lip keepers evenly.

   If an excessive transition exists between the dock floor and leveler and/or lip does not contact both lip keepers evenly, contact Technical Services for further instructions.

3. Install the dock bumpers as required.

4. Turn the main electrical power ON.

⚠WARNING

Always stand clear of platform lip when working in front of the dock leveler. Serious personal injury or death may result.

5. Pull lanyard cable and hold until leveler platform is fully raised.

   OR

   Raise the leveler platform fully by depressing and holding the RAISE button.

6. Release lanyard cable if no transport vehicle present at the dock, the platform will lower to the full below-dock position as the lip folds.

   OR

   Release the RAISE button to lower the platform. As long as there is no transport vehicle present at the dock, the platform will lower to the full below-dock position as the lip folds.

NOTE: If a transport vehicle is present, the platform will lower until the lip rests on the transport vehicle bed. (See Operating Instructions in Operation section.)

7. When the platform lowers to the full below-dock position, the lip will fold. Pull lanyard ring (or depress and hold the RAISE button) until the lip rises just enough to clear the lip keepers, then release the lanyard ring (or RAISE button) to allow the platform to lower to the cross-traffic (stored) position (lip engages lip keepers).

8. Perform steps 5 – 7 at least four times make sure the leveler functions properly and there is no binding.

⚠CAUTION

Unless the dock leveler is equipped with a tethered remote, two people are required to engage the maintenance prop: one person to operate the unit, the other person to engage the maintenance prop.

9. Raise the platform fully. Hold the platform at this position by pulling the lanyard ring (or RAISE button) and move the maintenance prop to the service (upright) position. Release the lanyard ring (or RAISE button) to allow the platform to lower until it is resting on the maintenance prop (Lockout/tagout).

10. Remove lifting brackets located on each side of platform.

11. Support toe guards then remove cotter pin used in shipping and carefully release the toe guards.

12. Pull lanyard ring (or depress and hold the RAISE button) until the maintenance prop drops to its stored position. Release the lanyard ring (or RAISE button) and allow the platform to lower fully. Check operation of toe-guards.

13. When the platform lowers to the full below-dock position, the lip will fold. Pull lanyard ring (or depress and hold the RAISE button) until the lip rises just enough to clear the lip keepers, then release the lanyard ring (or RAISE button) to allow the platform to lower to the cross-traffic (stored) position (lip engages lip keepers).

Operating Instructions

DANGER

Stay clear of dock leveler when transport vehicle carrier is entering or leaving dock area.

DO NOT move or use the dock leveler if anyone is under or in front of leveler.

Keep hands and feet clear of pinch points. Avoid putting any part of your body near moving parts.

Failure to follow these instructions may result in severe personal injury or death.

WARNING

Only trained personnel should operate the dock leveler.

DO NOT use a broken or damaged dock leveler. Make sure proper service and maintenance procedures have been performed on leveler before using.

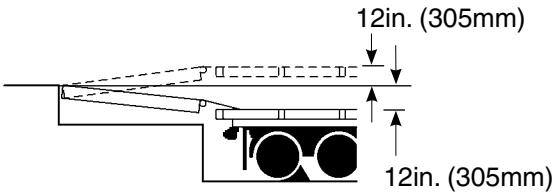
transport vehicle wheels must be chocked unless the vehicle restraint is used. Never remove the wheel chocks until loading/unloading is finished and transport vehicle driver has been given permission to leave.

Make sure platform lip rests on the transport vehicle bed with at least 4 in. (102 mm) of overlap.

Maintain a safe distance from side edges of leveler during the loading/unloading process.

Failure to follow these instructions may result in serious personal injury or death.

WARNING



The MA pneumatic dock leveler is designed to compensate for a maximum ± 12 in.* (305 mm) of height difference between the loading dock and the transport vehicle bed. DO NOT use the dock leveler if the transport vehicle bed is more than 12 in. (305 mm) higher or lower than the dock floor.

*service height may vary with design specifications

DO NOT overload the dock leveler.

DO NOT operate any equipment while under the influence of alcohol or drugs.

DO NOT leave equipment or material unattended on the dock leveler.

Failure to follow these instructions may result in personal injury and/or damage to equipment.

The dock leveler operating instructions are divided into the two methods of loading and unloading:

- **For ramp loading and unloading, see Ramp Loading/Unloading Instructions on page 25.**
- **For end loading and unloading, see End Loading/ Unloading Instructions on page 26.**

Operating Instructions—Continued

Ramp Loading/Unloading Instructions

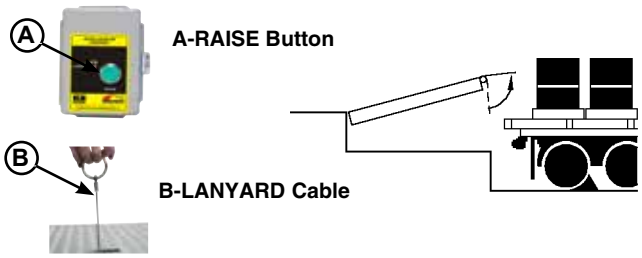
NOTE: If end unloading is required, see End Loading/Unloading Instructions on page 26.

For ramp loading or unloading, the CA dock leveler can be operated by pulling the lanyard chain (or depress RAISE button on the control panel (A).

1. Check to make sure transport vehicle is positioned squarely against dock bumpers.

2. Instruct driver to remain at the dock until the loading or unloading process has been completed.

3. Chock the transport vehicle wheels or use the vehicle restraint if available.

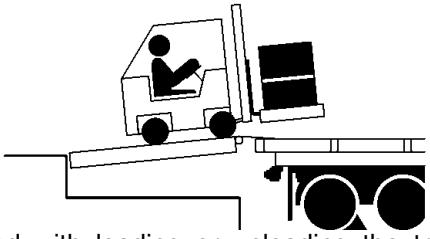


4. Extend the platform lip onto transport vehicle as follows:

   a. Raise the platform by pulling lanyard ring (B) (or depressing and holding RAISE button (A)).

   b. Pull lanyard ring (B) (or depress the RAISE button) until the lip is fully extended, then release the lanyard ring (or RAISE button (A). The platform will lower until the lip is resting on the transport vehicle bed.

   c. Make sure that the lip is fully extended and supported on the transport vehicle along the entire width of the platform with at least 4 in. (102 mm) of lip contacting the transport vehicle.



5. Proceed with loading or unloading the transport vehicle.

6. If below dock loading is necessary, see steps 7-11. If not, proceed to step 12.

Below Dock Loading/Unloading Instructions

NOTE: If end unloading is required, see End Loading/Unloading Instructions on page 26.

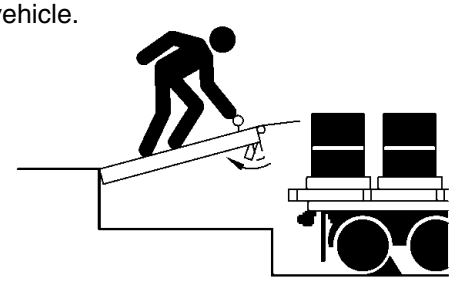
7. Check to make sure transport vehicle is positioned squarely against dock bumpers.

8. Instruct driver to remain at the dock until the loading or unloading process has been completed.

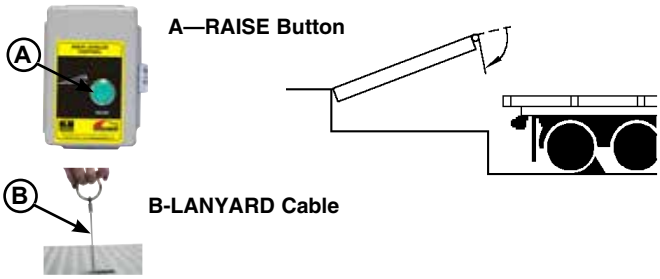
9. Chock the transport vehicle wheels or use vehicle restraint if present.

10. Raise the platform by pulling lanyard ring (B) (or depressing the RAISE button (A) to fully raise the leveler and extend the lip.

11. Walk out on the leveler, Pull and Hold the release ring (see picture below) until the platform lowers onto the transport vehicle. Make sure there is a minimum of 4" of lip overlapping the transport vehicle.



Loading/Unloading Completed - Reset Leveler



12. When loading or unloading is finished, raise the platform by pulling lanyard ring (B) (or depressing and holding RAISE button (A).

13. Pull lanyard ring (B) (or hold the RAISE button (A) until the lip folds enough to clear the transport vehicle, then release the RAISE button. The lip will fold and the platform will return to the cross-traffic position.

14. Remove chocks from transport vehicle wheels or release the vehicle restraint if used.

15. Indicate to driver that transport vehicle may leave the dock.

Operating Instructions—Continued

End Loading/Unloading Instructions

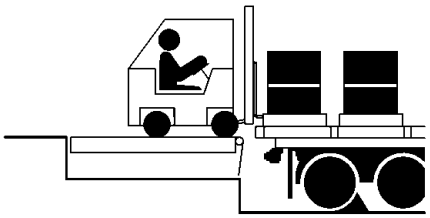
NOTE: If ramp loading is required, see Ramp Loading/Unloading Instructions on page 25.

End loading or unloading can be done with the dock at the cross-traffic position or below-dock position, depending on the height of the transport vehicle bed.

1. Check to make sure transport vehicle is positioned squarely against dock bumpers.

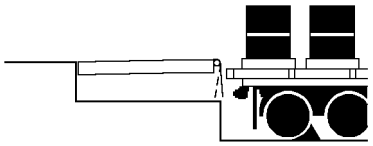
2. Instruct driver to remain at the dock until the loading or unloading process has been completed.

3. Chock the transport vehicle wheels or use the vehicle restraint if available.



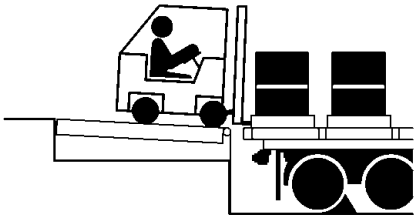
End Loading/Unloading — Platform at Cross-Traffic Position.

4. If transport vehicle bed is at or above dock floor level, leave leveler at the cross-traffic position and proceed with loading or unloading.

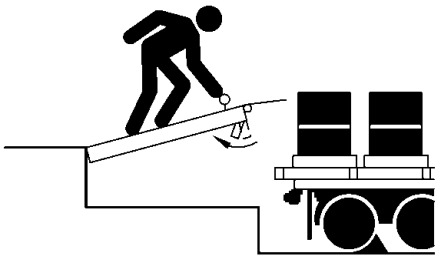


End Loading/Unloading — Platform Too High Use Below-Dock Position.

5. If transport vehicle bed is below the dock floor level, perform steps 6 –12.



End Loading/Unloading — Platform at Below-Dock Position.



6. Pull lanyard ring (or depress the Raise button) to position the platform high enough to clear the lip keepers, but not high enough to extend the lip.

7. Walk out on the leveler, pull and hold the safety leg retract pull ring (located in the recess at the front of the platform). This will cause the lip to extend away from the lip keepers and the cross traffic safety legs to fold to allow the leveler to lower to the below dock position.

8. When the platform lip clears the lip keepers, continue to hold the pull chain as the leveler lowers to the below-dock service position. The platform will drift down to the full below-dock position.

9. Proceed with loading/unloading.

NOTE: When end unloading is finished and access to the rest of the transport vehicle is still required, the platform lip will need to be extended. See Ramp Loading/Unloading Instructions on page 25 for further instructions.

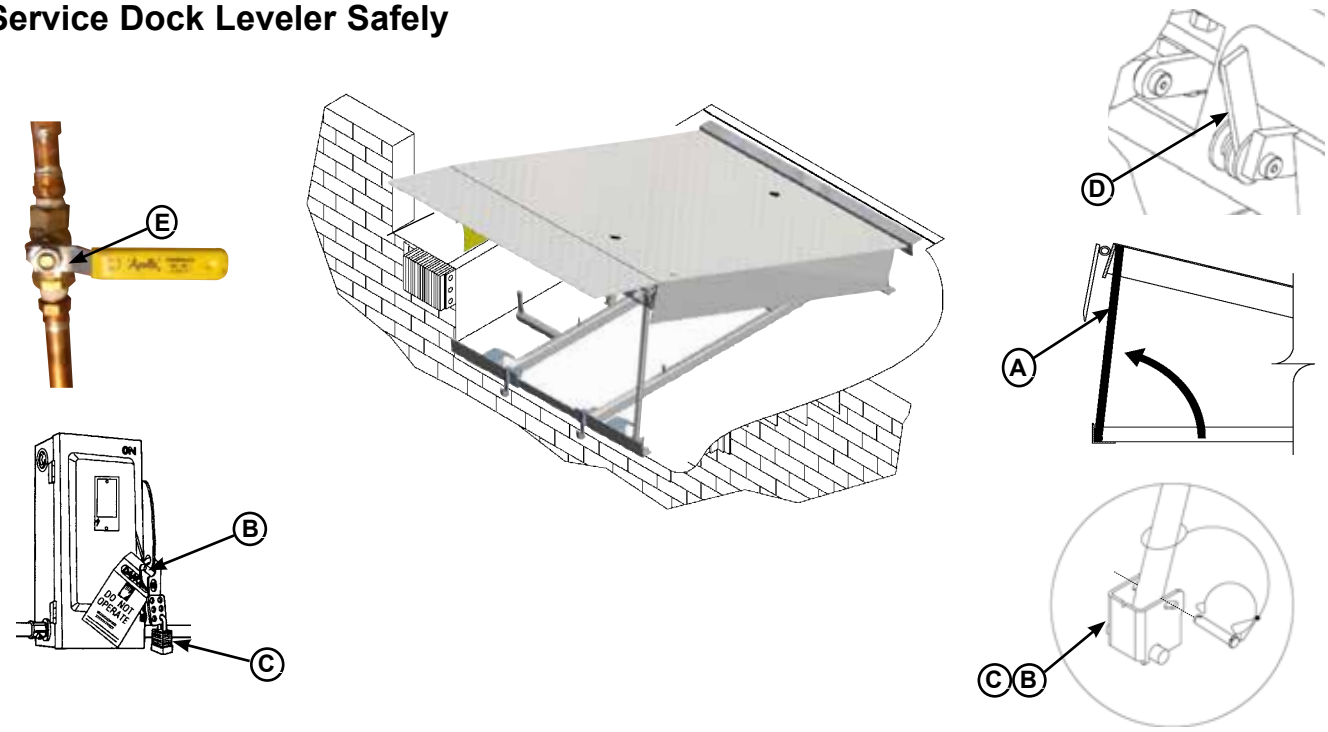
10. When the loading or unloading is finished, return the dock leveler platform to the cross-traffic (stored) position.

11. Pull the lanyard ring (B) (or depress the RAISE button (A)) until the lip clears the lip keepers. Release lanyard ring (or RAISE button), leveler will return to the stored or cross traffic position.

12. Remove chocks from transport vehicle wheels or release the vehicle restraint if used.

13. Indicate to the driver that the transport vehicle may leave the dock.

Service Dock Leveler Safely



A— Maintenance Prop B —Tag Out Device C —Lock out Device D— Lip Prop E —Valve,Air Supply

⚠WARNING

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop. Failure to do this may result in serious personal injury or death.

⚠WARNING

Always stand clear of the dock leveler lip when working in front of the dock leveler.

The maintenance prop MUST be in the service position when working under the dock leveler. For maximum protection, use an OSHA approved locking device to lock the maintenance prop in the service position. Only the person servicing the equipment should have the key to unlock the maintenance prop.

Unless the dock leveler is equipped with a tethered remote, two people are required to engage the maintenance prop: one person to operate the unit, the other person to engage the maintenance prop.

Failure to follow these instructions may result in serious personal injury or death.

⚠WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete. Failure to do this may result in serious personal injury or death.

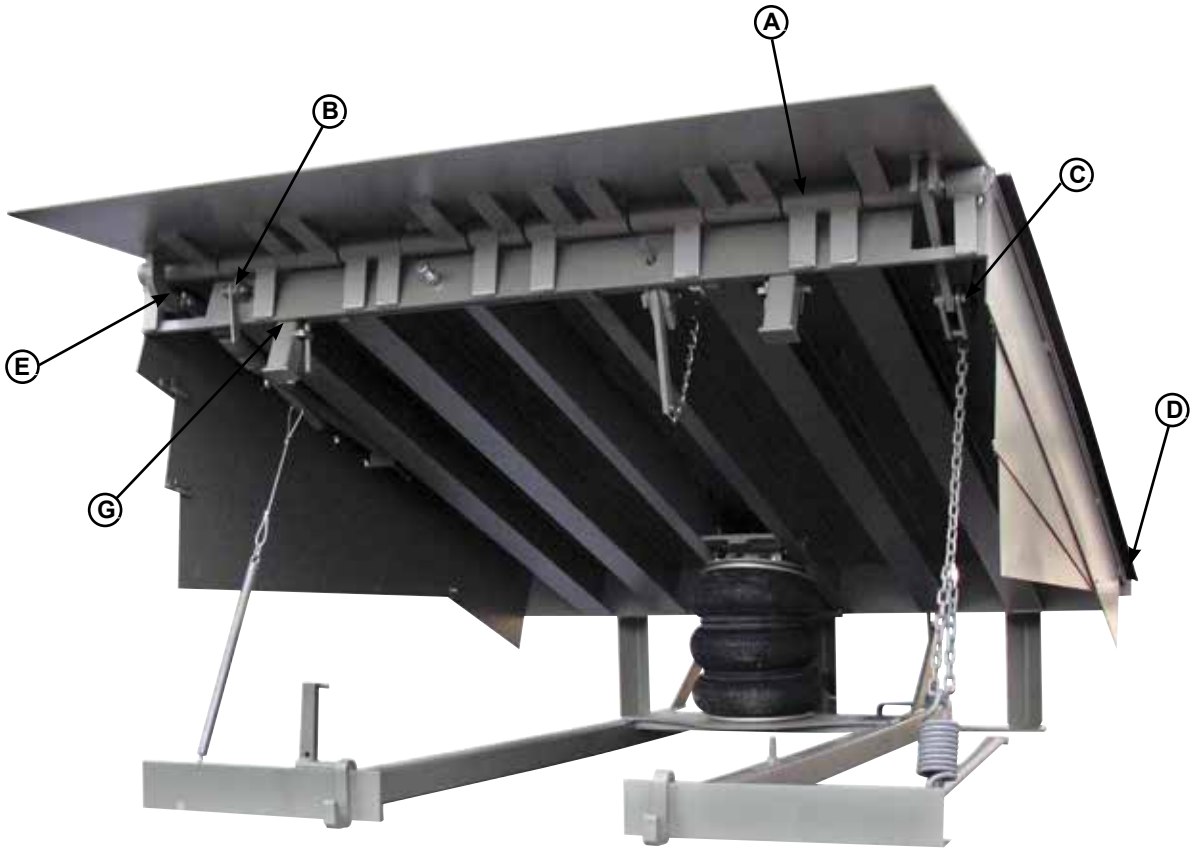
Whenever performing maintenance under the dock leveler platform, support the platform with the maintenance prop (A). Position the maintenance prop behind front header plate while staying clear of the lip. The Lip Prop should be used to keep the lip extended (D). Additional supports should be used to prevent the lip from collapsing if working under the leveler. Lock the maintenance prop in the service (upright) position using an OSHA approved lockout/tag out device* (B&C).

Whenever servicing the dock leveler, lock the electrical power disconnect in the OFF position. Use only an OSHA approved lockout/tag out device* (B).Turn off air supply to the leveler(E).

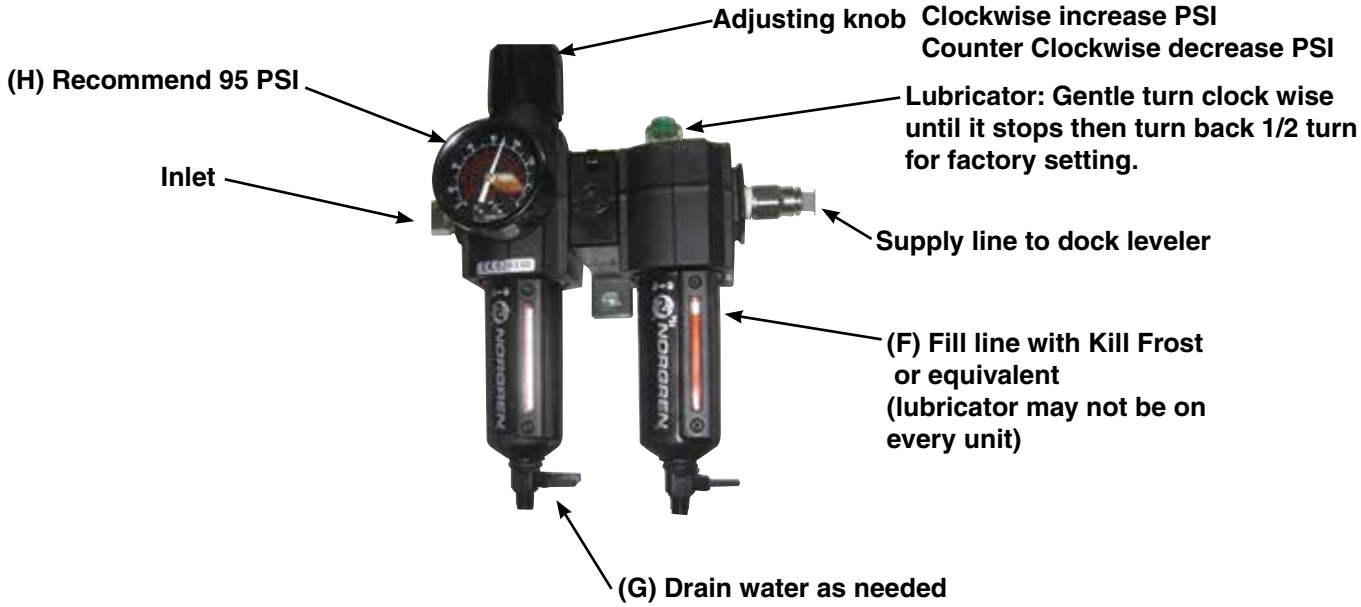
Only the person servicing the equipment should have the capability to remove the lockout/tag out devices. The Tag out devices* must inform that repairs are in process and clearly state who is responsible for the lockout condition.

* Refer to OSHA regulation 1910.146.
* Refer to OSHA regulation 1910.147.

Periodic Maintenance



A— Lip Hinge Area
B— Lip Maintenance Prop Pivot
C— Lip Link Pivots
D— Platform Hinge Area
E— Lip Assist Pin
G— Safety leg linkage pivots


Adjusting knob
Clockwise increase PSI
Counter Clockwise decrease PSI
(H) Recommend 95 PSI
Lubricator: Gentle turn clock wise until it stops then turn back 1/2 turn for factory setting.
Inlet
Supply line to dock leveler
(F) Fill line with Kill Frost or equivalent (lubricator may not be on every unit)
(G) Drain water as needed

Regular maintenance must be performed on a weekly and quarterly schedule. Follow all safety precautions.

Weekly Maintenance

(F)— Check Kill frost level. (may be required more frequently depending on usage)

(G)— Drain water (may be required more frequently depending on usage and compressor size).

(H)— Verify Line Pressure is at 95 PSI.

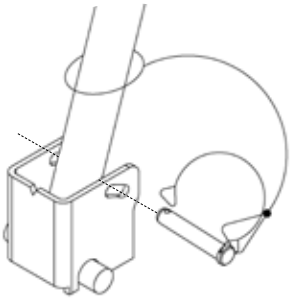
- Operate the dock leveler through the complete operating cycle to maintain lubrication.

NOTE: To thoroughly inspect the platform hinge area, put the platform in the full below-dock position.

- Inspect the platform hinge and the lip hinge areas. The hinge areas must be kept free of dirt and debris. Build-up of foreign material in the hinge areas will cause abnormal operation.

- Inspect the area under the platform, around and under the air bellows. Build-up of foreign material in this area may damage air bellows components, causing abnormal operation.

DANGER



A maintenance prop permanently attached and hinged to the unit with means for lock out/tag out requirements (per OSHA 1910.147) is included with each pit style dock leveler. In addition, it is recommended and good safety practice to use an additional means to support the dock platform and lip anytime when physically working in front of or under the dock leveler. This additional means may include, but not limited to a boom truck, fork truck, stabilizing bar or equivalent.

Quarterly Maintenance

- Perform Weekly Service Items

- Lubricate the following areas with light weight machine oil:

(A)— Lip hinge area unless equipped with grease fittings (apply oil to the top of the entire length of lip hinge when platform is at the full below-dock position and lip is folded).
(D)— Platform hinge area (apply oil to top of all platform hinges when platform is at the full below-dock position).
(C)— Lip Link pivots.

NOTE: Apply grease to lip hinge grease fittings if equipped.

- Lubricate the following areas with light-weight machine oil:

(B)— Lip maintenance prop pivot

(G)— Safety leg linkage pivots

- Lubricate the following areas with white lithium grease (if equipped with grease fittings):

(A)— Lip hinge area (inject grease into all the lip hinge grease fittings).

(E)— Lip assist pin.

NOTICE

Failure to properly lubricate the dock leveler will cause abnormal operation of the leveler.

Adjusting the Latch and Lip Actuator Spring Tension

⚠WARNING

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop. Failure to do this may result in serious personal injury or death.

⚠WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete. Failure to do this may result in serious personal injury or death.

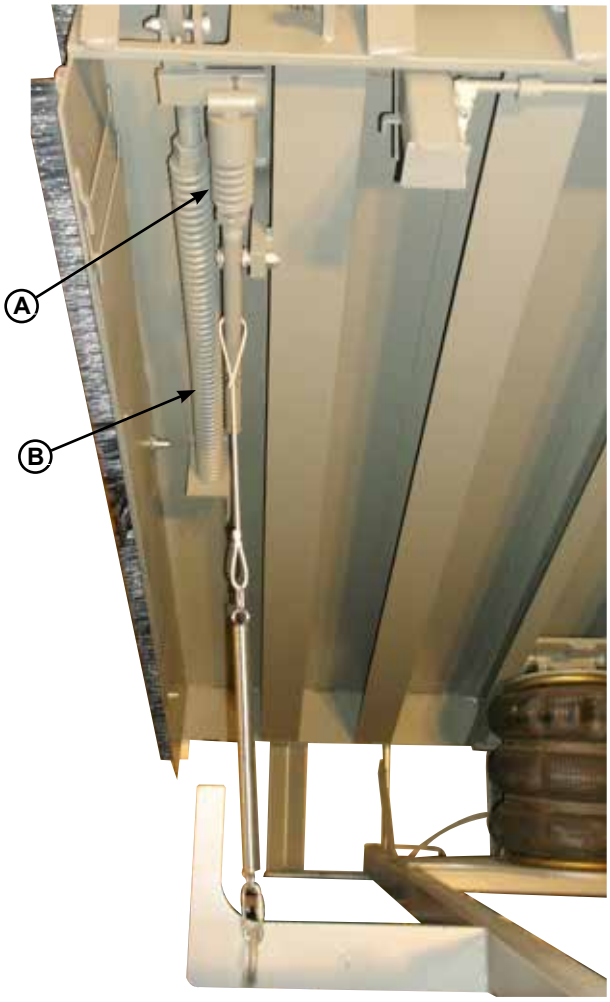
⚠WARNING

Always stand clear of the dock leveler lip when working in front of the dock leveler.

The maintenance prop and lip maintenance prop MUST be in the service position when working under the dock leveler. For maximum protection, use an OSHA approved locking device to lock the maintenance prop in the service position. Only the person servicing the equipment should have the key to unlock the maintenance prop.

Unless the dock leveler is equipped with a tethered remote, two people are required to engage the maintenance prop: one person to operate the unit, the other person to engage the maintenance prop.

Failure to follow these instructions may result in serious personal injury or death.



A— Lip Latch Spring Adjustment

B— Lip Actuator Spring Adjustment

Adjusting Lip Latch Spring Tension

This adjustment is set at the factory and should not require additional adjustment.

Unlike mechanical levelers, the lip will not immediately begin to fold as the platform returns to the stored position.

After the platform is fully raised, and the lip extends, the lip latch is designed to hold the lip in the extended position until the platform drifts down to the below dock position.

If the lip does not remain extended check proper engagement of the lip latch.

NOTE: Use two-turn increments when adjusting lip assist spring. Check lip operation after each adjustment. Repeat until proper operation is obtained.

Adjust spring tension as follows:

1. Loosen jam nut (A).
2. To increase spring tension, turn nut (B) clockwise.
3. To decrease spring tension, turn nut (B) counterclockwise.
4. Tighten jam nut.

Recheck operation of platform and lip. Readjust lip latch spring tension and lip assist spring tension until proper operation is obtained.

Adjusting Lip Actuator Spring Tension

This adjustment is set at the factory and should not require additional adjustment.

Unlike mechanical levelers, the lip will not immediately begin to fold as the platform returns to the stored position.

The leveler lip remains extended as the platform drifts down to the below dock position. The lip will automatically fold when the platform when the dock is resting on the safety legs in the below dock position

1. Check air bellows and hoses for possible leaks.

2. If the lip does not fully extend additional spring tension may be needed.

NOTE: Use two-turn increments when adjusting lip assist spring. Check lip operation after each adjustment. Repeat until proper operation is obtained.

Adjust spring tension as follows:

1. Loosen jam nut (A).
2. To increase spring tension, turn nut (B) clockwise.
3. To decrease spring tension, turn nut (B) counterclockwise.
4. Tighten jam nut.

Recheck operation of platform and lip. Readjust lift spring tension and lip assist spring tension until proper operation is obtained.

Adjust Lip Stop Bolt

WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete. Failure to do this may result in serious personal injury or death.

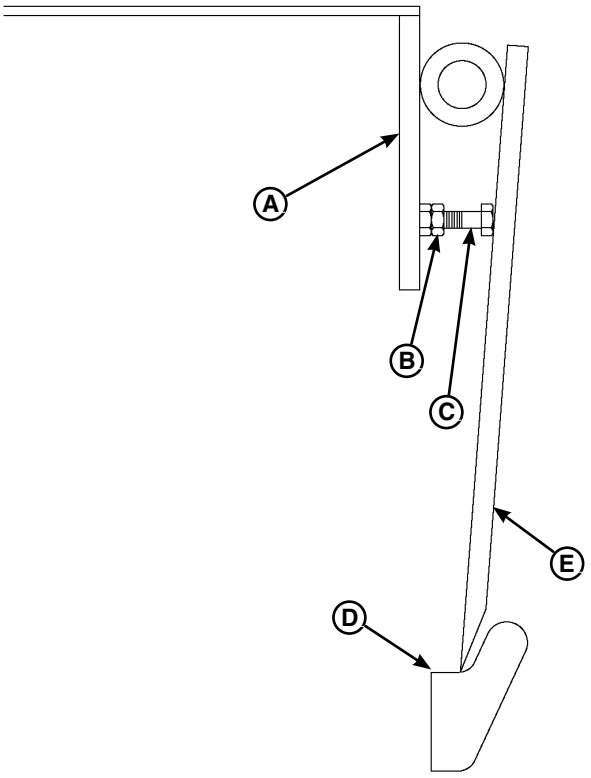
WARNING

Always stand clear of the dock leveler lip when working in front of the dock leveler. Failure to do this may result in serious personal injury or death.

WARNING

The platform maintenance prop MUST be in the service position when working under the dock leveler. For maximum protection, use an OSHA approved locking device to lock the maintenance prop in the service position. Only the person servicing the equipment should have the key to unlock the maintenance prop.

Failure to follow these instructions may result in serious personal injury or death.



A— Platform Frame
B— Jam Nut
C— Stop Bolt
D — Lip Keeper
E — Lip

Check that lip (E) is fully resting on the lip keepers (D) and at the lowest part of the keeper cradle. If lip is not resting properly in keepers, perform the following adjustment.

1. Fully raise platform. Manually raise the lip and engage lip maintenance prop.
2. Loosen jam nut (B).
3. Adjust stop bolt (C) as necessary.
   - Turn stop bolt “in” (clockwise) to allow lip to fold closer to platform frame (A).
   - Turn stop bolt “out” (counterclockwise) to hold lip further away from platform frame (A).
4. Tighten jam nut.
5. Disengage lip maintenance prop.
6. Walk platform down to cross-traffic (stored) position.
7. Check lip position in both keepers. Repeat procedure if necessary.

Snubber Spring assembly

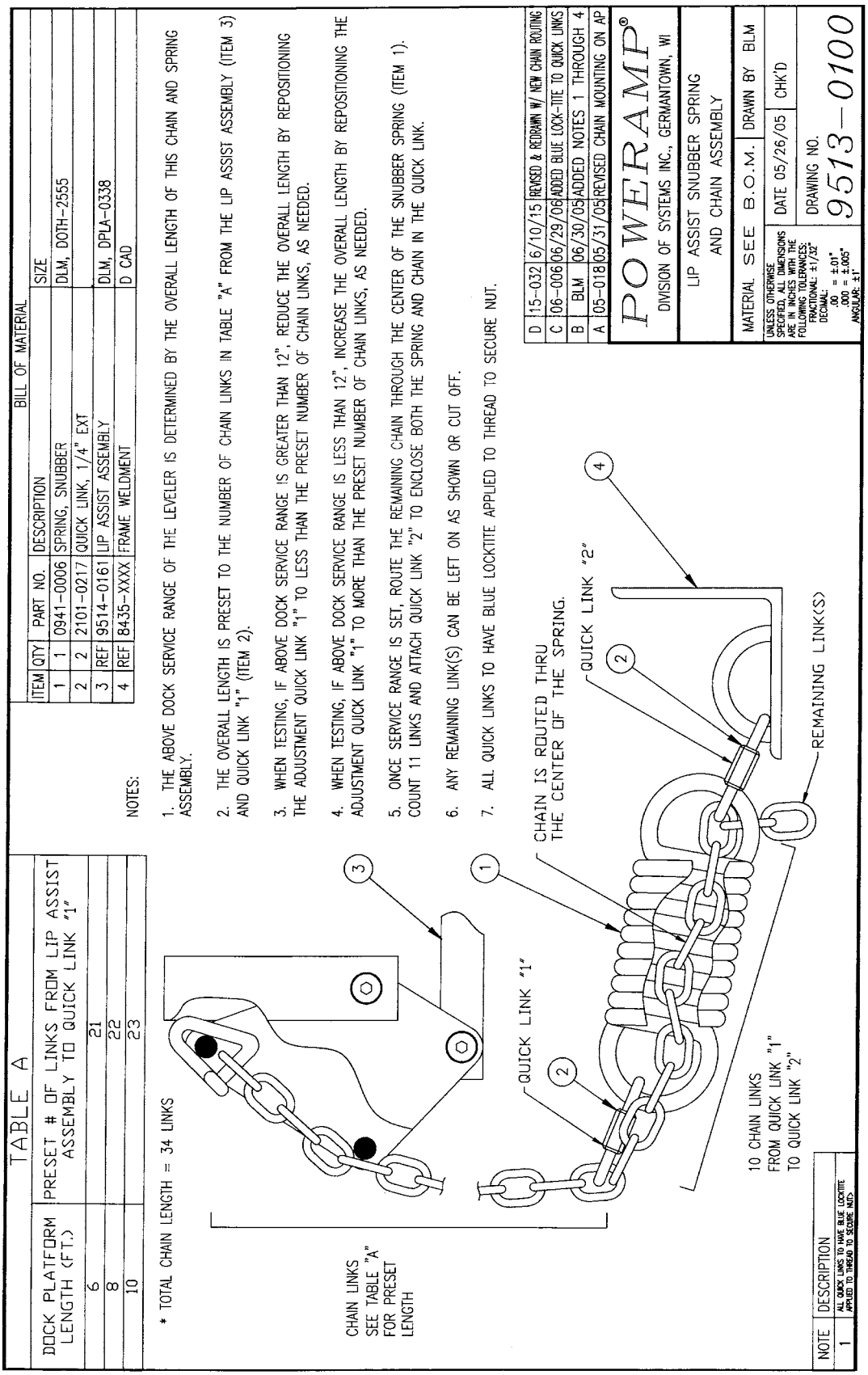


TABLE A
DOCK PLATFORM LENGTH (FT.)
PRESET # OF LINKS FROM LIP ASSIST ASSEMBLY TO QUICK LINK "1"
6 21
8 22
10 23
* TOTAL CHAIN LENGTH = 34 LINKS
BILL OF MATERIAL
ITEM QTY PART NO. DESCRIPTION SIZE
1 1 0941-0006 SPRING, SNUBBER DLM, DOTH-2555
2 2 2101-0217 QUICK LINK, 1/4" EXT
3 REF 9514-0161 LIP ASSIST ASSEMBLY DLM, DPLA-0338
4 REF 8435-XXXX FRAME WELDMENT D CAD
NOTES:
1. THE ABOVE DOCK SERVICE RANGE OF THE LEVELER IS DETERMINED BY THE OVERALL LENGTH OF THIS CHAIN AND SPRING ASSEMBLY.
2. THE OVERALL LENGTH IS PRESET TO THE NUMBER OF CHAIN LINKS IN TABLE "A" FROM THE LIP ASSIST ASSEMBLY (ITEM 3) AND QUICK LINK "1" (ITEM 2).
3. WHEN TESTING, IF ABOVE DOCK SERVICE RANGE IS GREATER THAN 12", REDUCE THE OVERALL LENGTH BY REPOSITIONING THE ADJUSTMENT QUICK LINK "1" TO LESS THAN THE PRESET NUMBER OF CHAIN LINKS, AS NEEDED.
4. WHEN TESTING, IF ABOVE DOCK SERVICE RANGE IS LESS THAN 12", INCREASE THE OVERALL LENGTH BY REPOSITIONING THE ADJUSTMENT QUICK LINK "1" TO MORE THAN THE PRESET NUMBER OF CHAIN LINKS, AS NEEDED.
5. ONCE SERVICE RANGE IS SET, ROUTE THE REMAINING CHAIN THROUGH THE CENTER OF THE SNUBBER SPRING (ITEM 1). COUNT 11 LINKS AND ATTACH QUICK LINK "2" TO ENCLOSE BOTH THE SPRING AND CHAIN IN THE QUICK LINK.
6. ANY REMAINING LINK(S) CAN BE LEFT ON AS SHOWN OR CUT OFF.
7. ALL QUICK LINKS TO HAVE BLUE LOCKTITE APPLIED TO THREAD TO SECURE NUT.
CHAIN LINKS SEE TABLE "A" FOR PRESET LENGTH
QUICK LINK "1"
CHAIN IS ROUTED THRU THE CENTER OF THE SPRING.
QUICK LINK "2"
REMAINING LINK(S)
10 CHAIN LINKS FROM QUICK LINK "1" TO QUICK LINK "2"
NOTE DESCRIPTION
1 ALL QUICK LINKS TO HAVE BLUE LOCKTITE APPLIED TO THREAD TO SECURE NUT
D 15-032 6/10/15 REVISED & REDRAWN W/ NEW CHAIN ROUTING
C 06-006 06/29/06 ADDED BLUE LOCK-TITE TO QUICK LINKS
B BLM 06/30/05 ADDED NOTES 1 THROUGH 4
A 05-018 05/31/05 REVISED CHAIN MOUNTING ON AP
POWERAMP®
DIVISION OF SYSTEMS INC., GERMANTOWN, WI
LIP ASSIST SNUBBER SPRING AND CHAIN ASSEMBLY
MATERIAL SEE B.O.M. DRAWN BY BLM
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES WITH THE FOLLOWING TOLERANCES:
FRACTIONAL: ±1/32"
DECIMAL: .00 = ±.01" .000 = ±.005"
ANGULAR: ±1°
DATE 05/26/05 CHK'D
DRAWING NO. 9513-0100

⚠WARNING

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop. Failure to do this may result in serious personal injury or death.

⚠WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete. Failure to do this may result in serious personal injury or death.

⚠WARNING

Always stand clear of the dock leveler lip when working in front of the dock leveler.

The maintenance prop MUST be in the service position when working under the dock leveler. For maximum protection, use an OSHA approved locking device to lock the maintenance prop in the service position. Only the person servicing the equipment should have the key to unlock the maintenance prop.

Unless the dock leveler is equipped with a tethered remote, two people are required to engage the maintenance prop: one person to operate the unit, the other person to engage the maintenance prop.

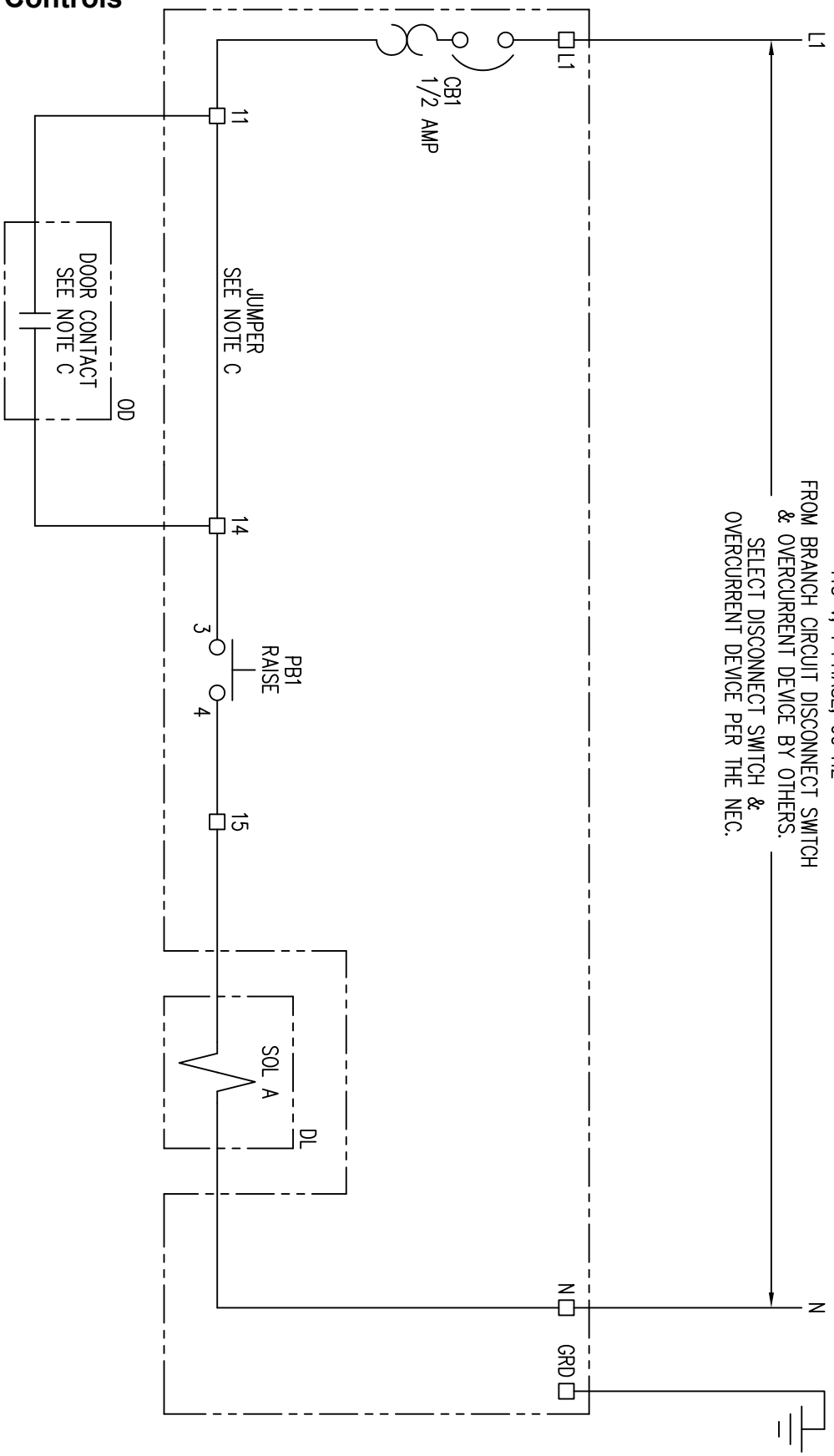
Failure to follow these instructions may result in serious personal injury or death.

Before performing the detailed troubleshooting procedures, check the following items first:

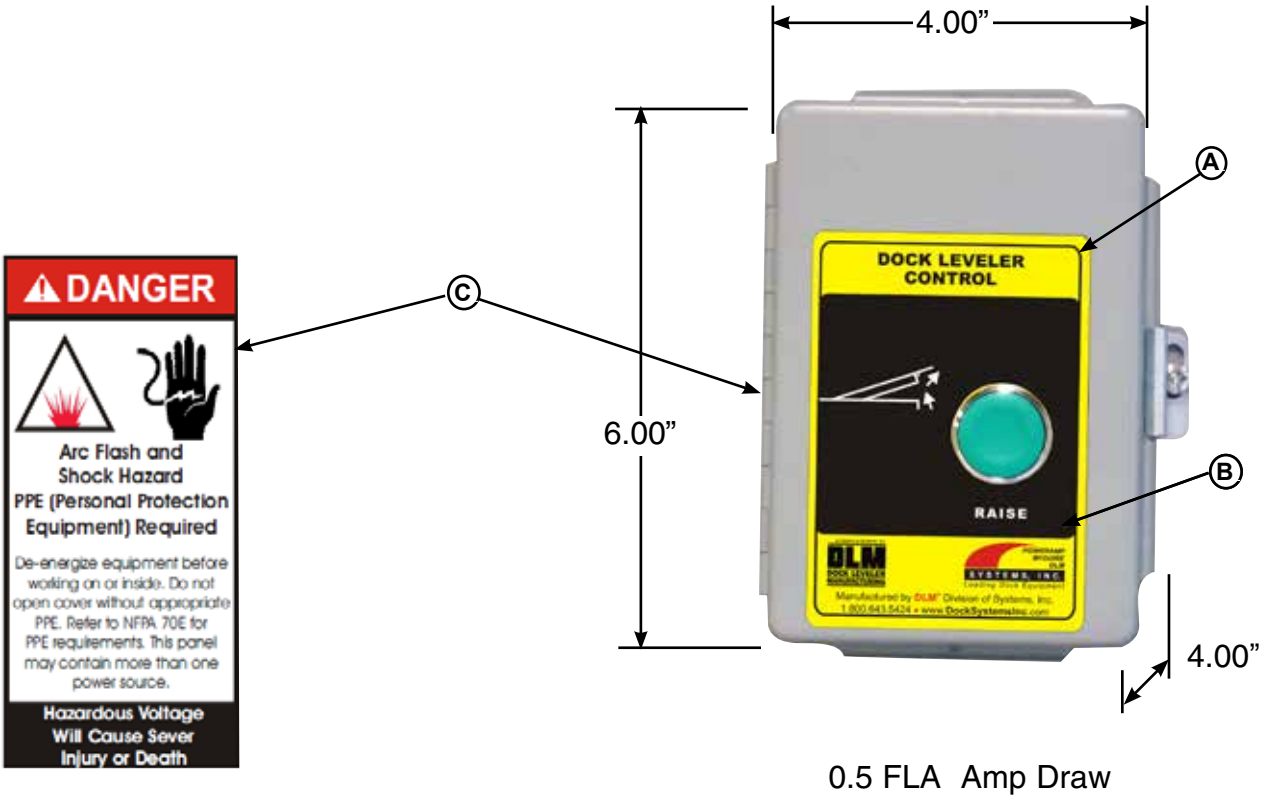
- Check all fuses and circuit breakers. Replace any blown fuse(s) with a fuse of equal specification and reset circuit.
- Make sure the correct voltages are present at the proper locations inside the control panel(s).

Symptom	Possible Cause	Solution
Platform does not rase	Low Air pressure	Minimum 80 PSI required at regulator, if lower check air supply.
	No voltage to solenoid	Check breakers if okay check voltage at control box and solenoid
	Lanyard Cable Adjustment	Check Cable adjustment
	Incorrect Air Line Connections	Verify pilot and Main supply air line connections are correct at control box.
Platform rises slowly	Air bladder or connecting air lines punctured	Check air bladder and air line repair or replace as needed
	Damaged or restricted air lines	Replace damaged air line or remove restriction
	Low Air pressure	Minimum 80 PSI required at regulator, if lower check air supply.
	Dock leveler binding	Check for visible obstructions that could cause binding. Remove obstructions. If no obstructions found, call Technical Services.
Platform does not rise to full height.	See Platform Rises Slowly	See Platform Rises Slowly See Periodic Maintenance in the Maintenance section.
	Low Air pressure	Minimum 80 PSI required at regulator, if lower check air supply.
Platform DOES rise to full height, but lip DOES NOT extend or extend fully.	Lip actuator spring needs additional tension.	Inspect lip actuator chain, repair or replace as needed.
Lip extends but does not remain extended as leveler drops.	Lip latch spring needs additional tension.	See Adjustment Section: Lip Latch Spring. • Increase tension as needed to keep latch engaged. • Clean any debris from lip latch area. • Lubricate as instructed in maintenance section.

Controls


L1
CB1
1/2 AMP
L1
11
JUMPER
SEE NOTE C
DOOR CONTACT
SEE NOTE C
OD
14
3
PB1
RAISE
4
15
SOL A
DL
N
GRD
N
CUSTOMER SUPPLIED
115 V, 1 PHASE, 60 HZ
FROM BRANCH CIRCUIT DISCONNECT SWITCH
& OVERCURRENT DEVICE BY OTHERS.
SELECT DISCONNECT SWITCH &
OVERCURRENT DEVICE PER THE NEC.

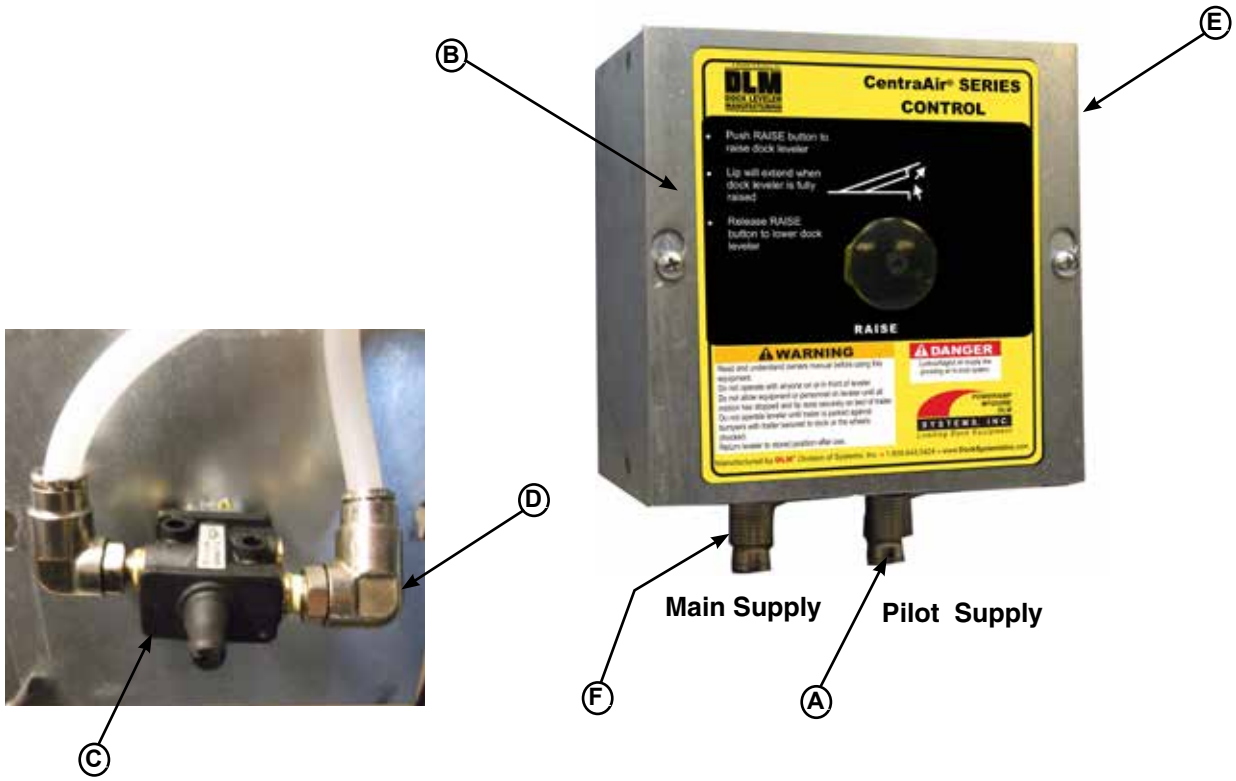
Electrical Control


4.00”
A
DOCK LEVELER CONTROL
RAISE
B
6.00”
4.00”
C
DANGER
Arc Flash and Shock Hazard
PPE (Personal Protection Equipment) Required
De-energize equipment before working on or inside. Do not open cover without appropriate PPE. Refer to NFPA 70E for PPE requirements. This panel may contain more than one power source.
Hazardous Voltage Will Cause Sever Injury or Death

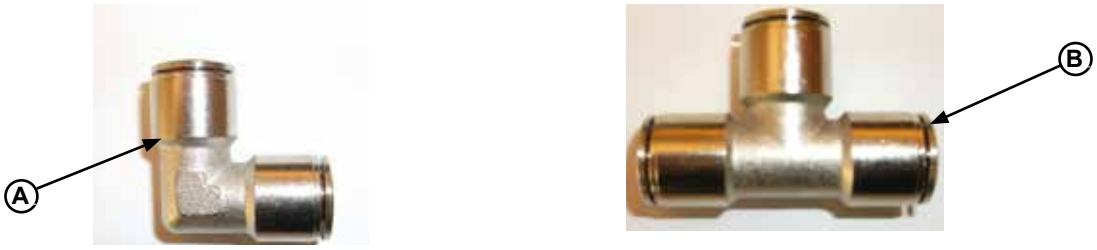
0.5 FLA Amp Draw

Item	Quantity	Part Number	Description
A	1	2756-0004	Push Button Controller, (9-V0-800-0-E) PowerampLabel
		2756-0006	Push Button Controller, (9-V0-800-0-E) DLM Label
B	1	1751-0872	Decal (English)
C	1	1751-0736	Decal, Arc Flash

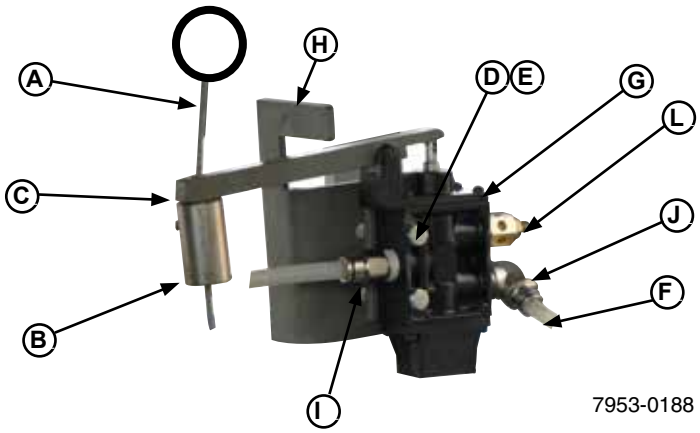
Control Box



Item	Quantity	Part Number	Description
A	2	9301-0249	3/8 Bulkhead fitting
B	1	1751-0892	Decal (English)
C	1	8581-0163	Valve,Air 2 Position 3 Way (Includes Knob)
D	2	9301-0248	3/8 Male Elbow
E	1	2756-0001	Push Button Controller, (9-V0-800-0-E) Poweramp DECALS
		2756-0003	Push Button Controller, (9-V0-800-0-E) DLM DECALS
F	1	1751-0893	Decal, Supply / Pilot (English)



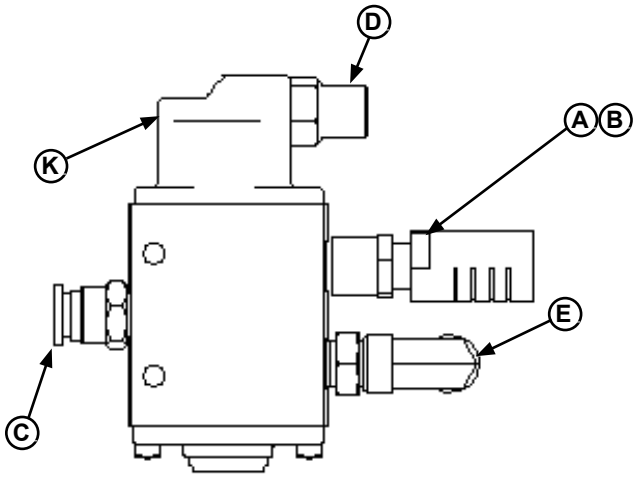
Item	Quantity	Part Number	Description
A	1	9301-0241	Elbow 3/8
B	1	9301-0244	Tee 3/8
		9301-0260	Tee 1/2



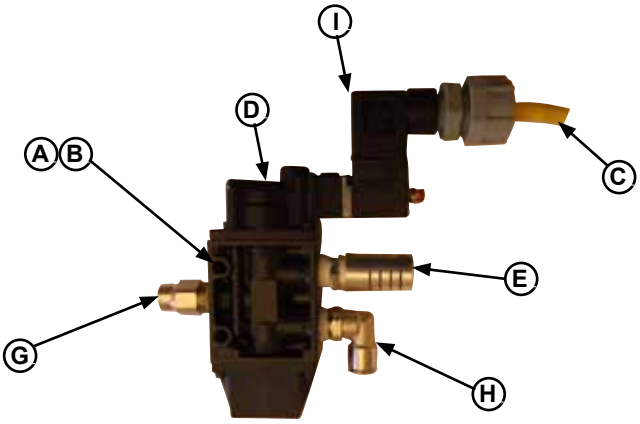
7953-0188 Complete (A-B-C)

Item	Quantity	Part Number	Description
A	1	5265-0001	Cable Assembly (Includes Pull Ring)
B	1	8103-0001	Weight Assembly
C	1	5402-0009	Lanyard Arm
D	2	2101-0116	Bolt ¼" x 2" Lg
E	2	2101-0143	Lock Nut ¼"
F	A/R	R980-0001	⅜ Nylon Air Line
G	1	8581-0158	Valve Operator, Mechanical
H	1	9512-2061	Lanyard Control Bracket
I	1	9301-0236	Fitting, Straight
J	1	9301-0237	Fitting, Elbow
K	A/R	8581-0152	Clamp, Air Line (Not Shown)
L	1	0521-0178	Down Speed Control

VALVE BLOCK



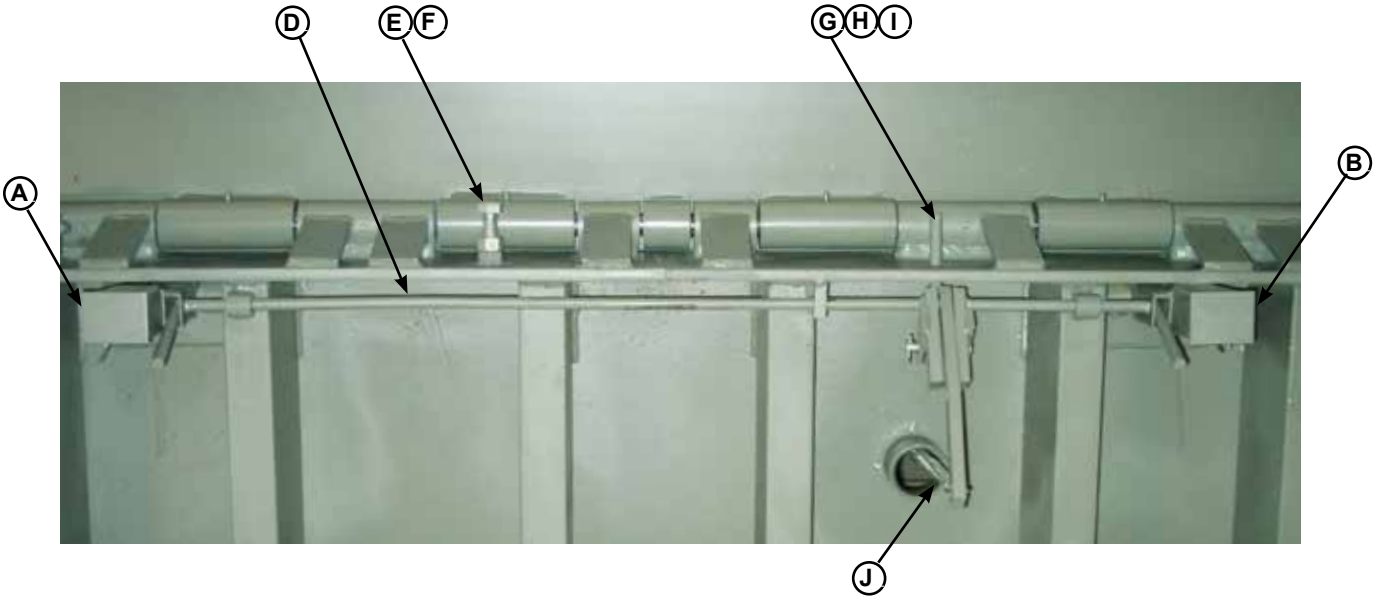
Item	Quantity	Part Number	Description
A	1	0521-0048	Brass Reducer 1/4 NPT to 3/8 NPT
B	1	0521-0178	Breather / Muffler
C	1	9301-0236	Fitting 3/8 NPT to 3/8 Tube
D	1	9301-0261	Fitting 1/8 NPT to 3/8 Straight
E	1	9301-0237	Fitting 3/8 NPT to 3/8 Swivel Elbow
F	A/R	8581-0152	Clamp, Air line (not Shown)
G	1	8583-0071	Valve Assemble



8583-0068 Complete assy

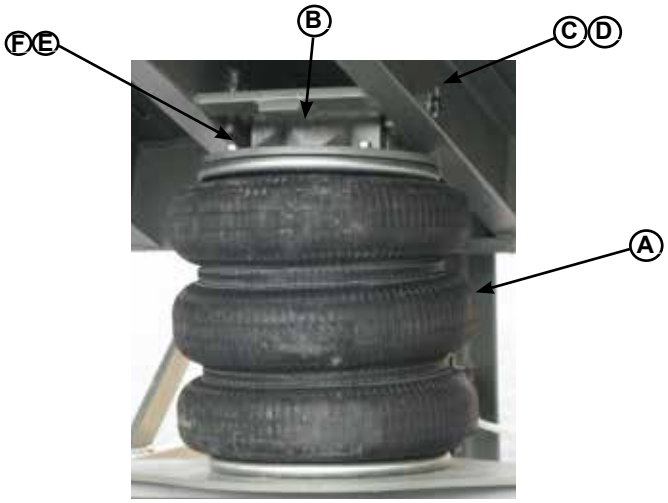
Item	Quantity	Part Number	Description
A	2	2101-0008	Bolt ¼” x 2” LG (not Shown)
B	2	2101-0143	Lock Nut ¼” (not Shown)
C	1	4305-0580	Harness
D	1	8581-0157	Valve Operator, Electrical ---REF---
E	1	0521-0178	Valve, Down Speed
F	A/R	8581-0152	Clamp, Air line (not Shown)
G	1	9301-0236	Fitting, Straight
H	1	9301-0237	Fitting, Elbow
I	1	8581-0159	Coil, Solenoid valve

Below Dock Control



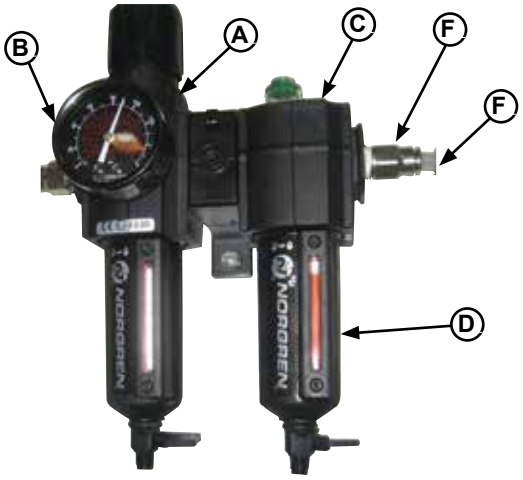
Item	Quantity	Part Number		Description
A	1	9514-0108		Leg, Right Safety Assembly with Spring.
B	1	9514-0109		Leg, Left Safety Assembly with Spring
D	1	DPLA-2122		Pull Bar Assembly, Safety Leg
E	1	DOTH-2075		Cap Screw, Lip Stop -11 UNC
F	1	DOTH-2356		Nut,Hex 5/8-11 UNC
G	1	DOTP-6647		Rod, Push
H	1	DOTH-2356		Pin, Clevis
I	1	DOTH-2374		Cotter Pin
J	1	7953-0131		Safety Chain kit
K	1	4261-0004	*	Ring, Chain
L	1	7951-0019	*	Chain, Safety leg
M	1	2101-0216	*	Quick Link
N	1	2101-0239	*	Chain Snap link

This page intentionally left blank



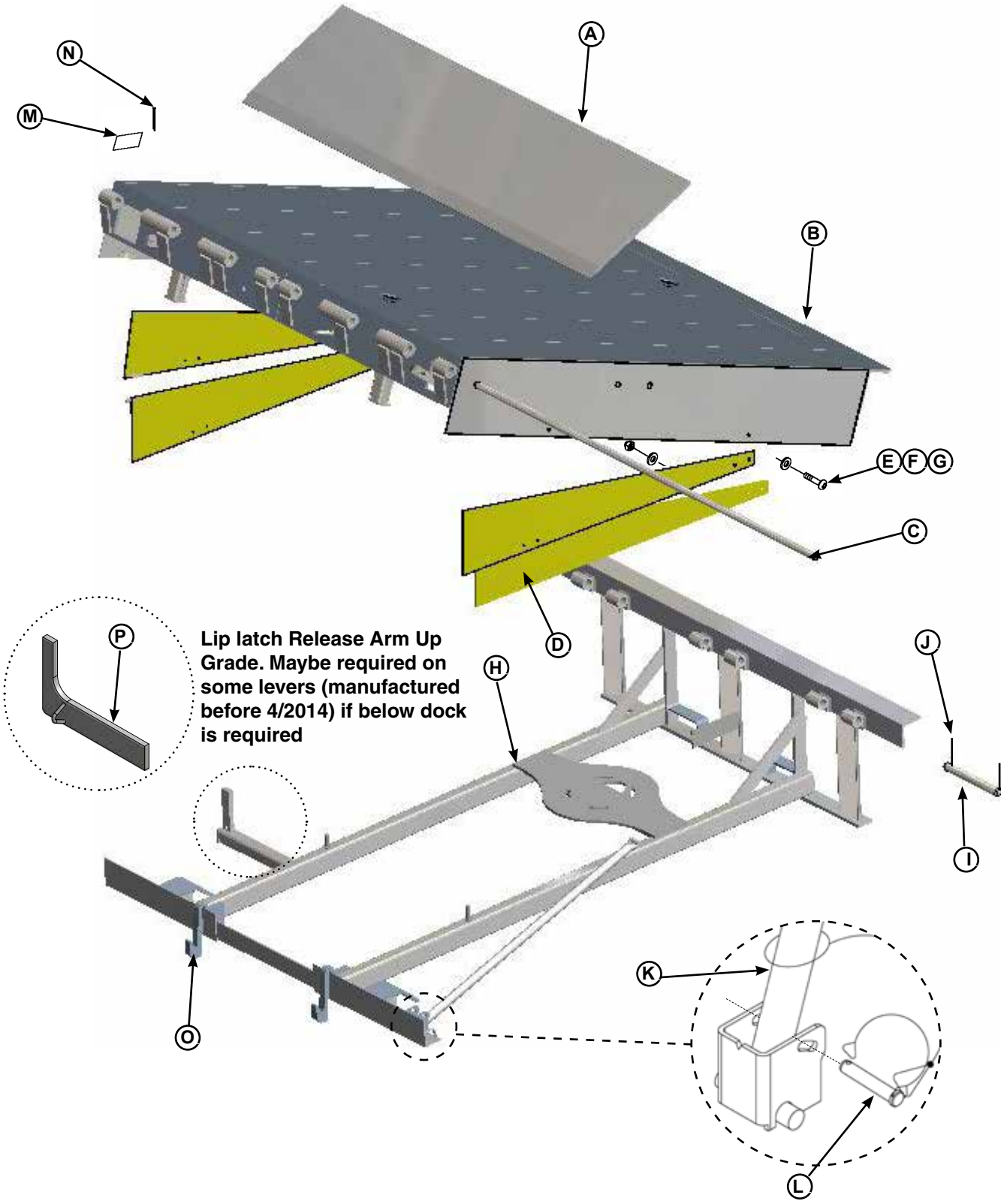
Item	Quantity	Part Number	Description
A	1	5811-0002	Air Bellows
B	1	9514-0160	Top Mounting Weldment
C	1	9512-2090	Pin, 49/64 X 10-¾ Lg.
D	2	2101-0045	Cotter Pin
E	8	2101-0273	3/8-16 UNC x 1” Lg.
F	8	2101-0258	Washer

95 PSI
Recommend for
best performance



Item	Quantity	Part Number	Description
A	1	8586-0008	Regulator Assembly W/ Lubricator Flow Left To Right (SHOWN).
		8586-0009	Regulator Assembly W/ Lubricator Flow Right to Left.
B	1	8581-0154	Filler/Regulator
C	1	8581-0153	Oil Lubricator (Pint)
		8583-0167	Oil Lubricator (Quart)
D	A/R	R981-0001	Kill Frost (1 Pint)
			Parts Below (not included in 8586-0008 or 8586-0009)
E	A/R	R980-0001	Nylon Air Line 3/8
		R984-0001	Nylon Air Line 1/2
F	E	9301-0236	Fitting Straight 3/8
		9301-0258	Fitting Straight 1/2

Frame and Platform



Frame and Platform

Item	Quantity	Part Number	Description
A	1	See Table A	Lip, Welded Assembly
B	1	9515-____[2]	Platform, Welded Assembly
C	1	9202-0050	Pin, Lip Hinge 6'W
		9202-0051	Pin, Lip Hinge 6.5'W
		9202-0052	Pin, Lip Hinge 7'W
D	1	DKIT-9179	Toe Guard Assembly 6 Foot (Both Sides and Hardware)
		DKIT-9180	Toe Guard Assembly 8 Foot (Both Sides and Hardware)
		DKIT-9181	Toe Guard Assembly 10 Foot (Both Sides and Hardware)
E	2	2101-0039	Nylon Lock Nut, 5/16-18 UNC
F	4	2101-0163	Washer, 5/16 in., Flat
G	2	2101-0011	Cap Screw, 5/16-18 UNC x 1 in.
H	1	8435-____[1]	Frame,
I	3	9202-0002	Rear Hinge Pin
J	6	2101-0047	Cotter Pin, ¼ x 2 in.
K	1	9224-0030	Maintenance Prop "39½
		9224-0031	Maintenance Prop "43½
		9224-0079	Maintenance Prop "47½
L	1	9201-0006	Prop Pin & Clip
M	1	1751-0010	Decal, Model / Serial ID
N	2	2101-0046	Cotter Pin, ¼ x 1¼ in.
O	2	8432-0983	Lip Keeper 16" Lip
		8432-0984	Lip Keeper 18" Lip
		8432-0985	Lip Keeper 20" Lip
P	1	8434-0821	Lip latch release Upgrade

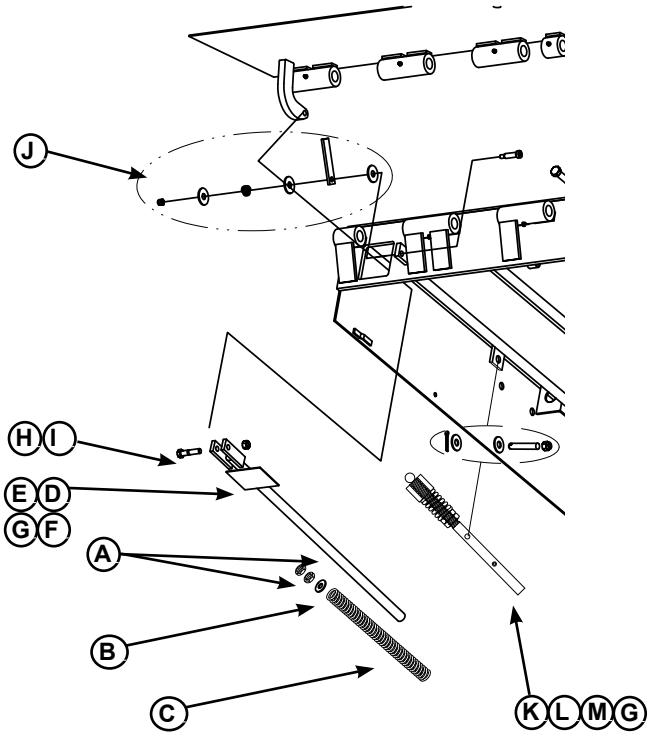
[1] Provide dock leveler serial number, platform size, and lip size when calling or faxing orders.
[2] Provide length and width of inspection plate opening when calling or faxing orders.

* For left/right orientation of dock leveler, see inside back cover of this manual.

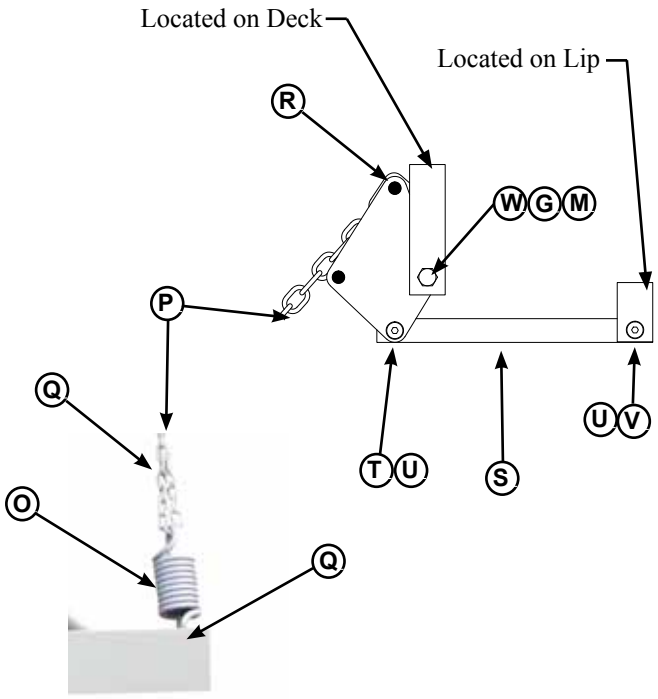
	LIPS (Table A)							
		6.0 FOOT	20K	25/30K	35K	40K	45K	50K
	1	16	0595-1500	0595-1503	0595-1506	0595-1509	0595-0512	0595-1515
	1	18	0595-1501	0595-1504	0595-1507	0595-1510	0595-0513	0595-1516
	1	20	0595-1502	0595-1505	0595-1508	0595-1511	0595-1514	0595-1517
		6.5 FOOT						
	1	16	0595-1518	0595-1521	0595-1524	0595-1527	0595-1530	0595-1533
	1	18	0595-1519	0595-1522	0595-1525	0595-1528	0595-1531	0595-1534
	1	20	0595-1520	0595-1523	0595-1526	0595-1529	0595-1532	0595-1535
		7.0 FOOT						
	1	16	0595-1536	0595-1539	0595-1542	0595-1545	0595-1548	0595-1551
	1	18	0595-1537	0595-1540	0595-1543	0595-1546	0595-1549	0595-1552
	1	20	0595-1538	0595-1541	0595-1544	0595-1547	0595-1550	0595-1553

PARTS

Lip Activation

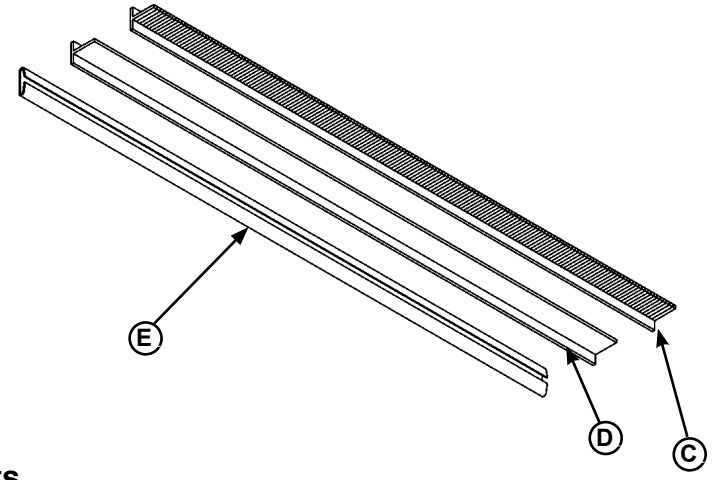


DPLA-0338 Complete



Item	Quantity	Part Number		Description
A	1	DLIP-0305		Lip Assist Rod Complete 34” Lg (Includes Nuts)
B	1	2101-0221		Washer
C	1	9511-0156		Spring, Lip STD
		9514-0114		Spring, Lip HD
D	1	9513-0097		Lip Latch Plate
E	1	2101-0051		Bolt,½ x 2½ Lg
F	2	2101-0004		Washer
G	2	DOTH-2163		Nut, ½ x 13 Lock Nut
H	1	2101-0222		Bolt, Shoulder x ½ x 1¾
I	1	2101-0223		Nut, Nylon lock”
J	1	9514-0091		Prop, Lip Maintenance Kit (includes all hardware)
K	1	5775-0004		Lip Latch Assembly (Includes Spring and Cable) 16" long
		5775-0005		Lip Latch Assembly (Includes Spring and Cable) 21" Long
L	1	2101-0220		Bolt, ½ x 1 Lg.
M	5	DOTH-2210		Washer, ½
N	1	2101-0045		Cotter Pin 1.00 LG
O	1	0941-0006		Snubber Spring
P	1	2102-0002		Chain 1/4 Grade 40/43 34 links 41 :long
Q	2	DOTH-2416		Lap Link 3/16 X 1"
R	1	DOTH-2421		Cold Shut 5/16
S	1	DPLA-0341		Linkage Bar
T	1	DOTH-2061		Bolt Shoulder
U	2	DOTH-2131		Nut, Lock Nut
V	1	2101-0308		Screw, Shoulder, 1/2 x 1.75 - 3/8-16 UNC BLK Oxide
W	1	DOTH-2065		Bolt, Hex 1/2-13 X 3-3/4 LG

Weather Seal

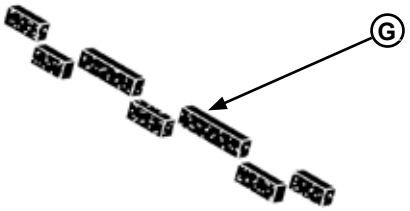


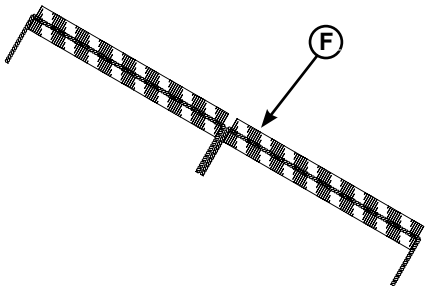
Weather Seal Kits

Item	Quantity	Part Number	Description
A	1	0195-0021	Brush Kit Includes Seal and Track, 1-1/2 in. 82" Lg. (Both Sides)
B	1	0195-0033	Rubber Kit Includes Seal and Track, 1-1/2 in. 82" Lg. (Both Sides)

Individual Replacement Seals

Item	Quantity	Part Number	Description
C	1	0195-0021	Brush Refill, 1-1/2 in. 82" Lg.
D	1	0195-0033	Rubber Refill, 1-1/2 in. 82" Lg.
E	1	0192-0146	Replacement Channel

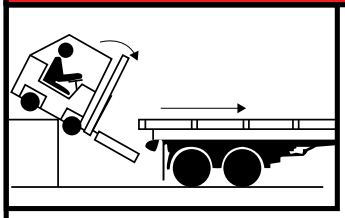




Item	Quantity	Part Number	Description
F	3	0195-0044	Rear Powerseal (Brush Seal)
G	1	0195-0046	Foam Seal Kit 6'
		0195-0047	Foam Seal Kit 6-1/2'
		0195-0048	Foam Seal Kit 7'

* Provide dock leveler serial number and size of platform when calling or faxing orders.
*Provide width of weather strip when replacing existing seals

DANGER



- Read and follow all instructions, warnings, and maintenance schedules in the manual and on placards.
- Operation and servicing of dock leveler is restricted to authorized personnel.
- Always chock transport vehicle wheels or engage vehicle restraint and set parking brakes before operating dock leveler or beginning to load or unload.
- Before activating dock leveler, ensure lip avoids contact with transport vehicle sides and cargo. If lip does not lower to transport vehicle bed, reposition transport vehicle.
- Ensure the transport vehicle floor supports extended lip or the leveler frame (lip keepers or below dock endload supports) supports the ramp before driving on ramp.
- Stay clear of hinges and front and sides of moving dock leveler.
- Never use hands or equipment to move the ramp or lip.
- Never use damaged or malfunctioning dock leveler. Report problems immediately to supervisor.
- Always store dock leveler and remove people, material, and equipment from ramp before vehicle leaves the dock.
- DO NOT ENTER PIT unless dock leveler is securely supported by the maintenance prop.
- Disconnect power and follow proper lockout/tagout procedures for the dock leveler before entering the dock leveler pit or doing any repair or inspection under the dock leveler.

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN DEATH OR OTHER SERIOUS INJURY.

Scan to view our owner's/user's manuals online.
www.**DockSystemsInc**.com

1.800.643.5424

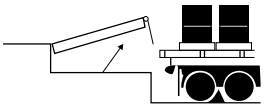
Call for additional placards, or manuals, or with questions regarding proper use, maintenance, and repair of dock leveler.

POWERAMP MCGUIRE DLM SYSTEMS, INC. Loading Dock Equipment

1751-0874 Rev A

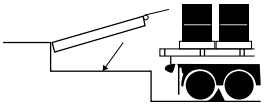
OPERATING INSTRUCTIONS

POWERED DOCK LEVELERS

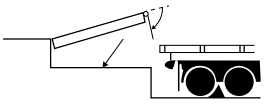


NORMAL OPERATION

1. Raise the platform by depressing and holding the RAISE button.

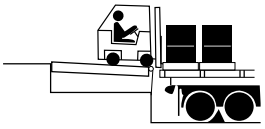


2. Hold the RAISE button until the lip is fully extended, then release the RAISE button. The platform will lower until lip is resting on the transport vehicle.



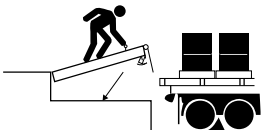
STORING LEVELER

1. Depress the RAISE button until the lip is completely folded. When the lip is folded, release the RAISE button. The platform will lower returning to the cross-traffic position.



BELOW DOCK ENDLOADING

- **(HYDRAULIC ONLY)** Depress and hold the RAISE button until the leveler is fully raised. As the lip starts to extend, release the RAISE button. The leveler will lower to the below dock position provided the lip extension allows the lip to clear the lip keepers.
- **(AIR POWERED ONLY)** Depress and hold the RAISE button until the leveler is 12" above dock level. Pull the below dock level chain until the leveler passes the below dock position.

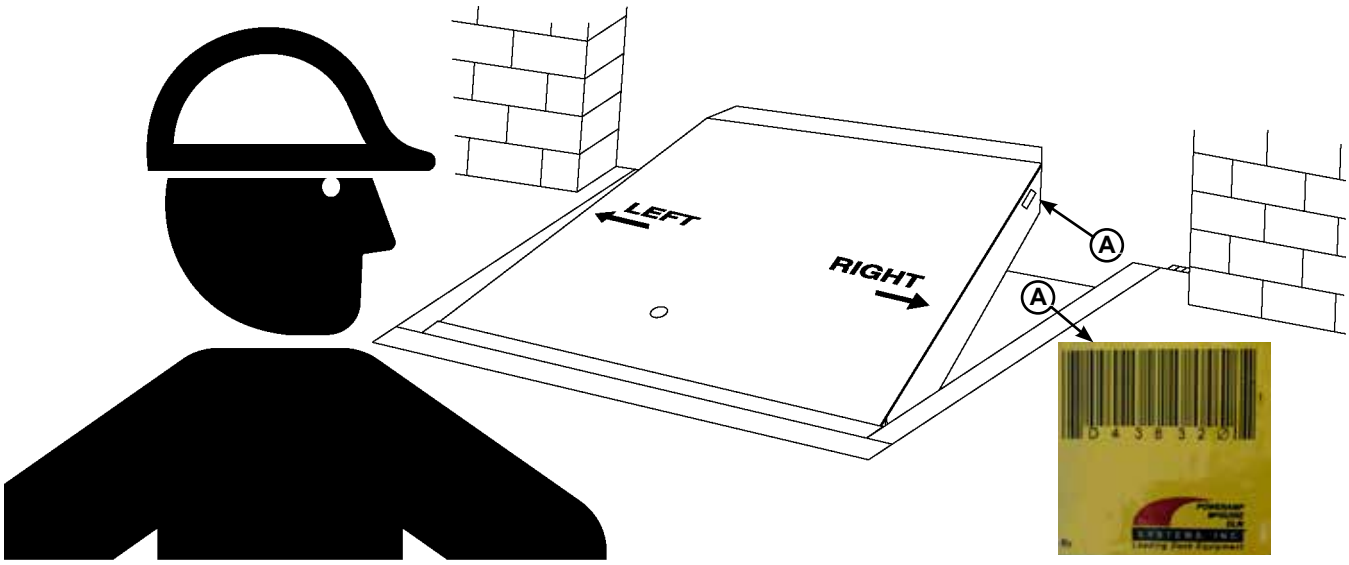


- **(HYDRAULIC WITH INFINITE LIP CONTROL)** If equipped, raise the platform by depressing and holding the RAISE button. When the lip is just above the lip keepers, simultaneously depress and hold the RAISE button and the LIP OUT button until lip has extended beyond the lip keepers. Release both buttons.

NOTE: If equipped, depressing E-STOP button will stop platform from lowering.

Item	Quantity	Part Number	Description
A	1	1751-0874	Placard, CA

Customer Information



NOTE: Refer to illustration for left/right orientation of dock leveler.

The model/serial number decal (A) is located on the right platform joist near the front (lip) of dock leveler.

When you receive your CA-Series dock leveler, write down the dock leveler model and serial number in the form provided. This will help ensure safe keeping of the numbers in the event the model/serial number decal (A) becomes lost or damaged.

Also, write down Systems, Inc.'s job number, the company that installed the dock leveler, and the original owner's name. This will all help to identify the specific dock leveler if more information is required.

When ordering, use part numbers and description to help identify the item ordered. Do not use "item" numbers. These are only for locating the position of the parts. Always give dock leveler MODEL NUMBER and/or SERIAL NUMBER.

For service, call or contact:

Systems, Inc.
P.O. Box 309
Germantown, WI 53022

Phone: (800) 643-5424
Fax: (262) 255-5917
E-mail: techservices@docksystemsinc.com

Dock Leveler Information

Model _____

Serial No. _____

Systems, Inc., Job No. _____

Original Owner Information

Name _____

Address _____

_____

Installer Information

Name _____

Address _____

_____

Date of Installation _____

STANDARD PRODUCT WARRANTY

SYSTEMS, INC. warrants that its products will be free from defects in design, materials and workmanship for a period of one (1) year from the date of shipment. All claims for breach of this warranty must be made within 30 days after the defect is or can with reasonable care, be detected. In no event shall any claim be made more than 30 days after this warranty has expired. In order to be entitled to the benefits of this warranty, the product must have been properly installed, maintained and operated in accordance with all manufacturer's recommendations and/or specified design parameters and not otherwise have been subject to abuse, misuse, misapplication, acts of nature, overloading, unauthorized repair or modification, application in a corrosive environment or lack of maintenance. Periodic lubrication, adjustment and inspection in accordance with all manufacturers' recommendations are the sole responsibility of the Owner/User.

In the event of a defect, as determined by SYSTEMS INC., covered by this warranty, SYSTEMS INC. shall remedy such defect by repairing or replacing any defective equipment or parts, bearing the cost for the parts, labor and transportation. This shall be exclusive remedy for all claims whether based on contract, negligence or strict liability.

WARRANTY LIMITATIONS

THE ABOVE WARRANTIES ARE IN LIEU OF ANY OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SYSTEMS INC. AND ITS SUBSIDIARIES SHALL NOT IN ANY EVENT BE LIABLE TO ANYONE, INCLUDING THIRD PARTIES, FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND INCLUDING BUT NOT LIMITED TO, BREACH OF WARRANTY, LOSS OF USE, LOSS OF PROFIT, INTERRUPTION OF BUSINESS OR LOSS OF GOODWILL.

PRODUCT SPECIFIC WARRANTY
"CENTRAAIR®" SERIES LEVELER

In addition to the "Standard Product Warranty" provided with all DLM® Products, Systems Inc., guarantees materials, components and workmanship to be free of defects for the following extended periods:

- Structural Warranty – For a period of ten (10) years from the date of shipment, product will carry a prorated structural warranty. This warranty specifically applies to; the deck section, lip section, frame, rear hinge assembly and front hinge assembly only. This warranty covers structural repairs to or replacement of dock leveler in Systems Inc sole discretion and expense including reasonable labor, materials, freight and travel. If Systems Inc determines replacement is necessary, it will provide the original purchaser with a credit toward the purchase of the new replacement Systems Inc. product in the amount equal to the original purchase price of the warranted product F.O.B. point of manufacture, discounted on a ten year straight line basis by the number of years of use prior to replacement.
- Pneumatic Warranty – For a period of four (4) years from the expiration of the Standard Product Warranty, Systems will provide replacement component parts from defective lifting system. This warranty specifically covers material and freight only and applies to; Bellows, hoses and Valves.